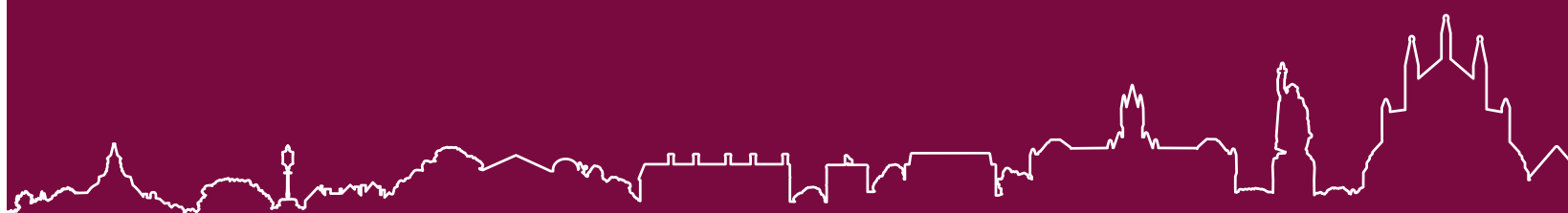




TECHNICAL GUIDANCE FOR NOISE

2022



Winchester
City Council

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1.0 INTRODUCTION

This guidance is designed to assist developers, agents and their consultants where noise is a consideration for any proposed development. This could be where noise would be caused by the proposed development or the proposed development would be exposed to noise from existing sources.

This guidance seeks to ensure that any assessment of noise, and subsequent report, meets the council’s expectations. If the advice made in this guidance is followed, it should avoid situations which cause decisions on planning applications to be delayed, or refused because inadequate information has been provided in support of a proposal.

It is recommended that the developer liaise with the council in the early stages of the planning process. Pre-application discussions can be very useful to determine the risk of noise being a significant consideration and to identify the supporting detail on noise likely to be required.

Prior to commencing any noise impact assessment, it is recommended that the noise consultant contact the Environmental Protection Team on 01962 848 097 or eh@winchester.gov.uk to agree the relevant assessment methodology and establish appropriate noise criteria to avoid unnecessary delay in the planning process.

This document does not provide guidance concerning Part E¹ of the Building Regulations. The Building Control Team deal with all issues associated with the Building Regulations including Part E and F; if you have any questions or queries concerning compliance with these regulations you should contact them on 01962 848 176 or buildingcontrol@winchester.gov.uk.

This guidance is not exhaustive and if you have any questions or wish to discuss the requirements of a specific noise assessment please contact the Environmental Protection Team.



¹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/468870/ADE_LOCKED.pdf

2.0 BACKGROUND

2.1 BACKGROUND

Winchester City Council is a district council which covers 661 square kilometres and contains over 50 rural settlements. The district is located in Hampshire and has a population of over 110,000, with a third of the population living within the town area of Winchester. Just over 40% of the district lies within the South Downs National Park. The Council Plan 2020-25 sets out the priority outcomes for the council and identifies the important issues that will be addressed over the life of the plan through the work of the council and its partners. The Council Plan, which was adopted at council on 15 January 2020 is focused on five key outcomes.

The priority outcomes are:

- Tackling the climate emergency and creating a greener district
- Homes for all
- Vibrant local economy
- Living well
- Your services, Your voice

ENVIRONMENTAL



HOMES FOR ALL



VIBRANT LOCAL
ECONOMY



LIVING WELL



YOUR SERVICES,
YOUR VOICE



3.0 NOISE POLICY CONTEXT

3.1 NATIONAL POLICY

3.1 National Policy

3.1.1 Noise Policy Statement for England

The overarching framework for national noise policy is the Noise Policy Statement for England² (NPSE). The long term vision identified in this policy is to:

‘Promote good health and a good quality of life through the effective management of noise within the context of government policy on sustainable development’

The aims of the policy are:

Through the effective management and control of environmental, neighbour and neighbourhood noise with the context of government policy on sustainable development:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

The NPSE introduces the concept of adverse effects common to toxicology to the assessment of noise impacts:

- NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level there is no detectable effect on health and quality of life due to the noise.

- LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

- SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

Noise effect levels are not set at fixed figures but vary depending on the context and character of the noise and site specific factors, which may impact on the severity of the effect. The NPSE states:

‘It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available.’



² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69533/pb13750-noise-policy.pdf

3.1.2 NATIONAL PLANNING POLICY FRAMEWORK

The concepts outlined in the NPSE are incorporated into the National Planning Policy Framework³ (NPPF). The parts of paragraphs 174, 185 and 187 that relate to noise are detailed below:

174.

Planning policies and decisions should contribute to and enhance the natural and local environment by:

- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant Information such as river basin management plans;

185.

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason;

187.

Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been complete.



3.1.3 AGENT OF CHANGE

The ‘agent of change’ principle essentially means that a person or business (i.e. the agent) introducing a new land use is responsible for managing the impact of that change.

Paragraph 187 of NPPF states that both planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities. ‘Unreasonable restrictions’ should not be placed on existing businesses as a result of development permitted after they were established.

For developers this means that for proposed residential development consideration should be given to whether there could be a significant adverse effect on future occupiers of that development from any nearby source(s) of noise, such as pre-existing entertainment venues or commercial/industrial sources. Where a potential significant adverse effect is identified, developers are likely to be required to factor into their planning application suitable mitigation measures to avoid any significant adverse impacts on health and the quality of life for future occupiers. Conversely, the principle also therefore includes the duty to ensure that the introduction of a noise sensitive receptor should not prejudice the current and future operational expectations of existing permitted planning uses in the locality.

The mitigation proposed can and may need works to the source of the noise rather than just the façade of the proposed building. It is important that engagement with the existing business occurs early on in the process and that the blended mitigation package is developed which can be technically agreed with the existing business. It is likely the applicant will need to carry the cost of such engagement and the mitigation, and that the occupants will need to be aware that this is part of the reasonable protections provided to them to protect amenity.



3.1.4 NATIONAL PLANNING PRACTICE GUIDANCE

Practical guidance on how the NPPF should be applied is contained within the Noise National Planning Practice Guidance⁴ (NPPG). The guidance includes qualitative examples of how to interpret adverse effect levels in a planning context.

RESPONSE	EXAMPLES OF OUTCOMES	INCREASING EFFECT	ACTION
NO OBSERVED EFFECT LEVEL			
Not present	No effect	No observed affect	No specific measures required
NO OBSERVED ADVERSE EFFECT LEVEL			
Present and not Intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No observed adverse effect	No specific measures required
LOWEST OBSERVED ADVERSE EFFECT LEVEL			
Present and Intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed adverse effect	Mitigate and reduce to a minimum
SIGNIFICANT OBSERVED ADVERSE EFFECT LEVEL			
Present and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant observed adverse effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable adverse effect	Prevent

The NPPG also gives further guidance on the factors influencing whether noise may be a concern at the planning stage and how adverse effects can be mitigated, including through the use of good acoustic design.

3.1.5 PERMITTED DEVELOPMENT RIGHTS

The General Permitted Development (England) Order 2015⁵ (GPD0) contains details of developments which are permitted by prior notification rather than full planning consent. The Order has been subsequently amended to include responsibilities in relation to noise to certain classes of permitted development and more recently has added further permitted development rights. Where noise is a material consideration it must be adequately assessed in planning applications and failure to do so is likely to result in such an application being refused.



3.2 LOCAL PLANNING POLICY

3.2.1 Winchester District Local Plan (Adopted March 2013)

The Winchester District Local Plan⁶ is one of the principal documents within the development framework and sets out the overall vision, objectives, spatial strategy and strategic policies of the city council, as well as how the joint strategy will be implemented and monitored. The Hampshire Minerals and Waste Plan, adopted in October 2013, also forms part of the development plan and relevant policies in that document will be taken into account in determining future development.



3.2.2 Part 2 of the Local Plan (adopted in April 2017)

This forms part of the district development framework which guides future planning decisions in the Winchester district. The main aim of Part 2 is to allocate land to help deliver the development strategy for new housing, economic growth and diversification for the period to 2031.

The policy of most relevance to noise is DM20, which states:

Development which generates noise pollution or is sensitive to it will only be permitted where it accords with the Development Plan and does not have an unacceptable impact on human health or quality of life.

A noise generating or noise sensitive development should include an assessment to demonstrate how it prevents, or minimises to an acceptable level, all adverse noise impacts. Assessment of these impacts should have regard to the advice contained within the Department for Environment Food and Rural Affairs (DEFRA) Noise Policy Statement for England (NPSE), March 2010, or its recognised replacement.

Development will not be permitted where levels above the Significant Observed Adverse Effect Level (SOAEL) exist and mitigation measures have not been proposed that will reduce impacts to as near to the Lowest Observed Effect Level (LOAEL) as is reasonably possible. Mitigation measures should not render the design and amenity spaces unacceptable.

3.2.3 SOUTH DOWNS LOCAL PLAN (2014-33)

For any development which takes place within the South Downs National Park, the South Downs National Park Authority (SDNPA) are the planning authority for the area. The South Downs Local Plan⁷ and its policies seek to ensure that the benefits and services people and wider society get from the natural environment are recognised and enhanced.

Development Management Policy SD54: Pollution and Air Quality states:

Development proposals will be permitted provided that levels of air, noise, vibration, light, water, odour or other pollutants do not have a significant negative affect on people and the natural environment now or in the foreseeable future, taking into account cumulative impacts and any mitigation.

Strategic Policy SD7: Relative Tranquillity aims to ensure that development within the national park does not harm the relative tranquillity of the area and to encourage the conservation and enhancement of positive tranquillity factors. The policy states:

1. Development proposals will only be permitted where they conserve and enhance relative tranquillity and should consider the following impacts:
 - a. Direct impacts that the proposals are likely to cause by changes in the visual and aural environment in the immediate vicinity of the proposals;
 - b. Indirect impacts that may be caused within the National Park that are remote from the location of the proposals themselves such as vehicular movements; and
 - c. Experience of users of the public right of way network and other publicly accessible locations.
2. Development proposals in highly tranquil and intermediate tranquillity areas should conserve and enhance, and not cause harm to, relative tranquillity.
3. Development proposals in poor tranquillity areas should take opportunities to enhance relative tranquillity where these exist.

In preparing proposals, applicants are advised to take into account the evidence of relative tranquillity in the South Downs National Park Tranquillity Study⁸ (South Downs National Park Authority, 2017). In order to assess impacts on relative tranquillity the South Downs Tranquillity Study should be used as a baseline from which to assess changes in the aural and visual environment which are likely to result from the proposals, including considerations of temporary/ permanent or varying nature of the impact.

The assessment of impacts on relative tranquillity is not the same as a noise assessment, and the assessment of zero noise impact for an application will not be taken necessarily as meaning that there would be a similar impact on relative tranquillity.

The Tranquillity Study identified areas which are highly tranquil, of intermediate tranquillity, and those of low tranquillity. Applications for development proposals in highly tranquil areas should demonstrate that they conserve and enhance, and do not harm, relative tranquillity. Development proposals in areas of intermediate relative tranquillity are the areas which are most vulnerable to change, and should avoid further harm to relative tranquillity and take every opportunity to enhance it.

Development proposals in areas of poor tranquillity are often located within or on the edge of urban areas and thus there may be limited scope for enhancing relative tranquillity in these areas; opportunities to enhance relative tranquillity should be taken wherever possible.

The extent that proposals conserve and enhance relative tranquillity will be determined by an assessment of the impact on relative tranquillity, which is proportionate to the scale and expected impact of the development in relation to the surrounding context.

4.0 NOISE ASSESSMENTS



4.1. NOISE ASSESSMENTS

Within the planning process, noise will often be a constraint due to pre-existing uses which may conflict with the development that is proposed. In these situations noise assessments are required to quantify and understand the likely impacts and inform the decision-making process. Where it is clear that the noise impacts require consideration, noise assessments will usually need to be submitted at the application stage.

The purpose of the noise assessment is to determine whether or not the proposed development is likely to be adversely affected by noise; or whether the proposals may cause noise which would adversely affect existing development. This includes matters relating to the ‘agent of change’ already discussed in paragraph 3.1.3. The noise assessment should be undertaken by a suitably qualified and competent person. The report should thoroughly assess all the relevant noise sources, be clear, comprehensive and impartial. Assessments should be open and clear in respect of the level of uncertainty attached to their conclusions.

A noise impact assessment submitted in support of a proposed development should demonstrate that the source of the noise is fully understood and quantified, that all nearby noise sensitive receptors have been identified and that the impact on the receptor has been established with reference to all relevant standards. Where there is no recognised standard for a particular noise source, agreement with the council on a suitable alternative should be sought.

The acoustic report should be set out in a format which is logical and understandable. It should provide the council with all the necessary information required to make an informed judgement about the potential noise impact. The Institute of Acoustics Southern Branch and Hampshire and Isle of Wight Environmental Control Advisory Committee (ECAC) have developed a ‘Noise Report Framework’ which provides further information regarding the acoustic report format, this can be found in Appendix 1.

4.2. ACOUSTIC CONSULTANTS

All noise assessments should be conducted by people suitably qualified in the field of acoustics and the assessment should contain details of the assessor’s qualifications, competency and professional memberships.

Most suitably qualified/experienced consultants will be Members of the Institute of Acoustics and/or Members of the Association of Noise Consultants in addition to holding relevant technical qualifications such as a Diploma or Degree in Acoustics or related engineering fields.

When providing information to support planning applications, consultants are expected to act at all times honestly, impartially and objectively and to gather evidence and report findings in a scientifically rigorous manner.



4.3. RESIDENTIAL DEVELOPMENTS

4.3.1 BS8233:2014

Winchester City Council considers that the internal noise limits for residential properties, as specified in BS8233:2014, should be considered as the ideal criteria, specifically:

ACTIVITY	LOCATION	DAY	NIGHT
		(0700-2300)	(2300-0700)
Sleeping	Bedroom		30dB LAeq 8 hour
Resting	Living room/ Bedroom	35dB LAeq 16 hour	
	Garden and outdoor spaces	55dB LAeq 16 hour	
In bedrooms at night individual noise events should not normally exceed 45dB L _{Amax} , F by more than 10 times			

The internal noise levels stated above should be achievable with windows open for ventilation and the prevention of overheating, unless demonstrated this is not necessary.



4.3.2 Good Acoustic Building Design

Paragraph 134 of the NPPG states:

Development that is not well designed should be refused, especially where it fails to reflect local design policies and government guidance on design, taking into account any local design guidance and supplementary planning documents which use visual tools such as design guides and codes.

Further specific information on Acoustic Design is available in the NPPG on Noise⁹.

It is therefore essential that developments use good acoustic design to achieve internal sound standards as far as is reasonably practicable. In order to do this successfully noise and vibration must always be considered at the initial design stage. If noise and vibration are only considered after site and building plans have been finalised (for example when specifying performance requirements of the building envelope), then the development is very unlikely to comply with the requirements of planning policy.

Good acoustic design will include:

- Location of buildings on the site to minimise noise exposure (this will include maximising separation of noise sources and sensitive receptors and use of buildings or topography to screen noise)
- Layout of habitable rooms within buildings to reduce noise exposure to more noise-sensitive rooms
- Ensuring dwellings exposed to high noise levels are dual aspect to provide each unit with access to a relatively quiet façade when possible
- Access to relatively quiet external amenity space
- Measures to reduce noise at source and/or on the transmission path where possible
- Design and insulation of the building envelope

Such measures should always be implemented in preference to sole reliance on insulation of the building envelope. In cases where the methods above would be effective in reducing noise exposure, relying only on sound insulation of the building envelope will not be regarded as good acoustic design. Such an approach leads to unsatisfactory development where dwellings are unnecessarily sealed from their environment and provide relatively poor amenity.

⁹ <https://www.gov.uk/guidance/noise--2>

4.3. RESIDENTIAL DEVELOPMENTS

4.3.3

ProPG: Planning and Noise Residential Development

When designing residential development the developer should follow the guidance provided in ProPG: Planning and Noise Residential Development, May 2017¹⁰ to ensure that the scheme embodies good acoustic design.

The aim of ProPG is to encourage better acoustic design of new residential development and to protect residents from the harmful effects of noise. Although the guidance relates to new residential development exposed predominantly to transport noise it is considered that the general principles of good acoustic design be applied to other comparable noise sources.

ProPG recommends a 2-stage approach, an initial noise risk assessment of the proposed development site and, where the results indicate that noise requires further consideration, a full assessment in the form of an Acoustic Design Statement.

The main emphasis of ProPG is the encouragement of good acoustic design (such as site layout, building massing, orientation and internal layout) at an early stage of the development process. A good acoustic design will reduce the reliance on using closed windows to ensure suitable internal noise levels and mitigate the impact of noise on external amenity areas such as gardens.



4.3.4

Acoustics Ventilation and Overheating Residential Design Guide

Indoor environmental quality is dependent on air quality (ventilation), thermal comfort and acoustic comfort. These factors are interdependent but tend to be addressed independently. Provisions for both ventilation and mitigation of overheating may include façade openings that permit external noise ingress, and/or mechanical equipment that generates noise. In both cases there is potential for noise impacts. The noise impacts may cause problems for occupants or lead to consequential action by occupants such as turning off ventilation systems.

Therefore where internal noise levels are predicted to be close to or just above the noise criteria specified in BS8233:2014, or if the assessment relies on windows being closed to achieve internal noise levels, the Institute of Acoustics (IOA) and Association of Noise Consultants (ANC) AVO Guide¹¹ (Acoustic Ventilation and Overheating Residential Design Guide: 2020) should be applied to demonstrate that the internal space will not be subjected to overheating.

If the use of mechanical ventilation to achieve internal noise levels is unavoidable, any noise assessment should take account of the noise levels generated by such ventilation when predicting the internal noise levels.

4.3. RESIDENTIAL DEVELOPMENTS

4.3.5

Internal Transference of noise within buildings

Approved Document E of the Building Regulations 2010¹² details legal standards of resistance to the passage of sound for buildings. In addition to the Regulation requirements, Approved Document E states:

'The performance standards set out in tables 1a and 1b are appropriate for walls, floors and stairs that separate spaces used for normal domestic purposes. A higher standard of sound insulation may be required between spaces used for normal domestic purposes and communal or non-domestic purposes. In these situations the appropriate level of sound insulation will depend on the noise generated in the communal or nondomestic space. Specialist advice may be needed to determine if a higher standard of sound insulation is required, and, if so to determine the appropriate level.'

Although noise transmission between new residential premises is a matter that can be addressed solely through the building control regime, there are occasions that such noise transfer will need to be assessed at the planning stage. This includes:

- A new development incorporating a commercial use on the ground floor and residential flats above.
- Conversion of an existing ground floor retail unit to restaurant where there is an existing residential flat above.
- Conversion of an office sharing a party wall with a light industrial use into a residential dwelling.

Habitable rooms within a development sharing a party wall/ceiling/floor with commercial premises shall be designed and constructed to provide reasonable resistance to the transmission of sound. An assessment of noise transmission using noise rating (NR) curves would be considered appropriate.



¹⁰ <https://www.ioa.org.uk/sites/default/files/14720%20ProPG%20Main%20Document.pdf>
¹¹ <https://www.association-of-noise-consultants.co.uk/wp-content/uploads/2020/07/ANC-AVO-Residential-Design-Guide-January-2020-v1.1.pdf>

¹² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/468870/ADE_LOCKED.pdf

4.4. INDUSTRIAL AND COMMERCIAL NOISE SOURCES

4.4.1

Industrial/Commercial Developments

BS 4142:2014+A1:2019 should be used to assess the likely impact of noise from industrial and commercial sources at noise sensitive premises.

The BS 4142 methodology involves predicting or measuring the specific sound level from the source in question and applying rating penalties for acoustic character features such as tonality, impulsivity or irregularity. This rated sound level is then compared to the existing typical LA90 background sound level. Impacts are assessed as follows:

- Typically, the greater this difference, the greater the magnitude of the impact.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context. When applying BS4142, reference to the Technical Note¹³ produced by the Association of Noise Consultants may be helpful.

It will be necessary to submit a noise assessment for any development which could result in a change in noise impact on any sensitive receptor (such as residential dwellings, schools, offices etc.). Examples of such developments are those that involve installing new noise-generating plant, new work processes or equipment or making changes to buildings or structures that could affect sound transmission.

It will also be necessary to submit a noise assessment for any development which places new sensitive receptors where they may be affected by noise from existing commercial uses. For example new residential dwellings on a high street served by air conditioning and kitchen ventilation plant or a new housing development on the edge of an existing industrial estate. When locating sensitive uses near to existing commercial noise sources it is essential to use good acoustic design to minimise noise impacts.

The aim for noise levels from industrial and commercial developments should be to minimise noise as far as reasonably practicable i.e. LOAEL (see paragraph 3.1.1). New developments should contribute and enhance the area in which they are located and where possible, contribute to the improvement of people's health and quality of life, in line with the NPSE. With this in mind, the design objective should be that the development should be designed so as to achieve a rating level of 10dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location. Where this criterion cannot be achieved, the various noise control measures considered as part of the assessment should be fully explained (i.e. relocation of noise sources, use of quieter equipment, enclosures, screening, restriction of the hours of operation etc.) and the achievable noise level should be identified. This information will allow the council to make a judgement regarding the application and its likely impact on the surrounding area.

Deliveries and collections are usually controlled by restricting operational hours but depending on the extent of these activities, a Noise Management Plan (NMP) may be required, which would include an assessment of noise. This would usually involve assessing the noise upon arrival, loading/unloading period and then departure. Where applicable, the noise assessment will take account of multiple noise sources operating simultaneously and the cumulative level of these.

In accordance with the 'agent of change' principle, it is the developer initiating the change that will be expected to fully mitigate any impacts from the change.

4.4.2

Noise and Vibration from Fixed Plant

Noise from fixed plant, equipment or machinery can be very annoying and disruptive to people living nearby, particularly where the noise source is impulsive or has tonal characteristics. Many of the noise complaints Environmental Protection receive about noise from plant, equipment and machinery specifically concern the character of the noise emitted. Any noise assessment therefore needs to consider not only the overall level of noise emitted but also its particular characteristics.

The noise assessment should be based on BS 4142:2014+A1:2019 and ideally should demonstrate that the plant is designed to achieve a rating level of 10dB(LAeq) below the typical background (LA90) level at the nearest noise sensitive location. The use of NR curves may also assist to demonstrate that the proposed plant will be acceptable in terms of frequency characteristics.

By designing the sound pressure level of any plant items to generate a noise impact of 10dB below the existing

background level, any plant noise impact should be of a negligible level, which should not give rise to complaints from users or occupiers of existing noise-sensitive properties. Where available, product specification data for new items should be submitted with the acoustic report. Consultants should be using these to compare with data from the noise survey and propose mitigation where the levels are above objective levels. Where this information is not available, a consultant may choose to measure the noise levels generated by comparable equipment already installed elsewhere (and in accordance with the guidance in BS 4142).

Where fixed plant, equipment or machinery is attached to a building the vibration caused by it can pass through the building structure and cause structure borne noise elsewhere in the building. Where it is to be installed in or on a building containing a noise sensitive use, structure borne noise should be considered in the noise assessment and adequate control measures should be proposed.

4.4.3

Assessment of Class E Uses

The Town and Country Planning (Use Classes) Order 1987 (as amended) was further amended on 01 September 2020 by The Town and Country Planning (Use Classes) (Amendment) (England) Regulations 2020¹⁴ which introduced a new use Class E – Commercial, Business and Service. Class E covers a wide range of uses which were previously separate classes, including shops, cafes/restaurants, financial services, offices, indoor sport, crèche/nursery and research/light industrial.

Given the broad range of development permissible under use Class E, where proposals seek a general Class E use, any noise assessment must include foreseeable impacts that could reasonably occur in the future without subsequent planning permission being required. Depending upon location, design and size of the

premises it is likely that the most significant noise impact will commonly be associated with restaurant, light industrial or indoor sport/recreational uses. If in doubt it is recommended the Environmental Protection team be contacted prior to a noise assessment taking place to discuss appropriate assessment criteria further.

Alternatively, the applicant may seek to propose a planning condition limiting the Class E uses (for example office use only). In such cases any noise assessment could be limited to those relevant activities only. This approach is welcomed and would not preclude a variation to change the use at a future date, provided updated noise assessments are presented.

4.5. NOISE FROM ENTERTAINMENT

Entertainment from pubs and clubs can make a positive contribution to the community and noise from such venues can create a vibrant night time economy. However, noise from entertainment venues can be annoying for local residents and businesses if it is not adequately contained within the venue. An acoustic assessment will therefore be required for any new entertainment venue or new sensitive receptor near to such venues.

Assessment should include measurement of the background sound level at times appropriate to the operation of the premises; identify sensitive receptors; and predict the specific noise level from the venue at the façade of all nearby sensitive receptors (and in external amenity areas, where appropriate). Assessments and predictions must consider a realistic worst-case for the permitted use (such as during a busy live music event). Noise from entertainment venues may include amplified sound, music, public address (PA) systems, and noise from people drinking or smoking outside and dispersing from the premises.

When considering the potential impact of a proposal for an entertainment venue consultants should consider the overall noise level (LAeq) and octave band noise levels from amplified music and PA systems.

Music noise in the 63 Hz and 125 Hz octave bands, which is often described as ‘bass noise’, is particularly difficult to contain and the impulsive and non-steady character of low frequency music noise is particularly disturbing for local residents exposed to it. Applicants and consultants should note that although a particular business model may require limited music, planning approval for an entertainment venue will remain in place as long as the development exists. Subsequent owners or tenants may wish to provide much louder entertainment in the future. For this reason applicants and consultants should predict the noise impact of a proposed entertainment venue using noise levels that are representative of those found in ‘typical’ venues of the kind being applied for. Consultants should provide their rationale for using particular noise levels and reference the source of the noise levels used during their predictions.

The ‘agent of change’ principal means that any new development close to existing entertainment venues must ensure that they are adequately protected against noise from the venue and the developer must ensure

that the noise impacts have been fully assessed and mitigation measures fully implemented.

Noise from people in beer gardens, terraces and other outdoor areas to licensed premises can cause significant disruption to residents. Where applications include outdoor areas (or changes to outdoor areas) an assessment of noise impact will be required. Outdoor areas to licensed premises may be considered unacceptable in principle in some cases, depending on the level of impact. In other cases conditions may be imposed to mitigate and minimise impact. Such conditions may cover:

- Design (including location, barriers, acoustic lobbies, acoustic curtains, air conditioning, rubber seals to doorways, rubber speaker mounts, sound limitation devices, absorption)
- Hours of use (exact hours are determined on a case by case basis but as a general rule outdoor areas are expected to close by no later than 21:00 on any day)
- Capacity
- A requirement for the submission of a Noise Management Plan (NMP) – see Appendix 2.

Developers proposing new entertainment venues or new residential developments near to such venues should also give consideration to the Licensing Act 2003 and the council’s licensing policy¹⁵, which states:

Where licensing applications are submitted to extend the hours of opening of premises, and in the case of new premises seeking to open between 23:00 and 08:00, applicants will be expected to either demonstrate that these hours of operation will have no adverse effect on the achievement of the licensing objectives, or set out the steps which they propose to take to secure these objectives.

In accordance with the government’s guidance, the licensing policy makes it clear that in areas of denser residential accommodation or areas where there are low levels of background noise (such as within South Downs National Park), stricter conditions relating to noise control will be imposed.

4.6. MIXED USE DEVELOPMENTS

Where a planning application includes a proposal to contain a potentially noisy development within the same site as a noise sensitive use or vice versa, a noise report will be required to assess the transfer of noise between the noisy and noise sensitive uses. Consultants should demonstrate that noise control measures will be sufficient to adequately contain the noise generated within the development and the potential noise generated by the use class. In doing so consultants should consider:

- the overall level of noise (LAeq) generated by the proposed use and any tonal or impulsive characteristics that the noise may contain.
- the acoustic properties of the development (including the construction of windows and doors and whether they can remain closed, ventilation systems etc.)
- any ancillary noise sources such as fans, air conditioning, etc.
- the operating hours of the commercial/industrial uses, including delivery/collection times.



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4.7. NOISE FROM TRANSPORTATION

Transportation noise should be assessed when there is the potential for a sensitive receptor to be exposed to adverse impacts from transportation noise, such as locating housing on a busy road or adjacent to a railway line. The noise assessment should cover a period sufficient to be representative of the prevailing noise climate. In most cases this will require assessment covering midweek and weekends. Some transport sources may be seasonal and their contribution to ambient noise levels significantly affected by meteorology, such as weather conditions and wind direction. These factors, where relevant, need to be considered.

Developments which may result in a significant impact on traffic flows (for example area-wide redevelopments, transport infrastructure, or land uses expected to generate very large transport impacts) should consider and account for the impact of increased traffic on

predicted future noise levels. Road traffic and rail calculation methodologies are detailed in the Control of Traffic Road Noise (CTRN) and Control of Rail Noise (CRN). Design Manual for Roads and Bridges (DMRB) sets out a method for evaluating immediate and long term impact from changes in the 18-hour traffic flow.

Assessments should include full details of proposed building construction and composite façade calculations to predict the internal noise level in habitable rooms. The noise levels in gardens and external amenity spaces, such as balconies should also be assessed, if applicable.

The noise levels specified in BS8233:2014 are the ideal design criteria for noise sensitive developments, to be achieved with windows open for ventilation/thermal comfort. Where such noise levels are not achievable, the application of ProPG and AVO, as discussed previously in sections 4.3.3 and 4.3.4, should be demonstrated.

4.8. AIR/GROUND SOURCE HEAT PUMPS

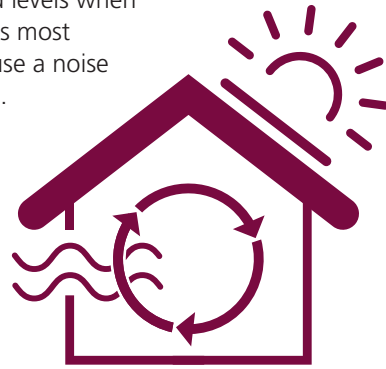
The installation of a single ground or air source heat pump on domestic premises is usually considered to be permitted development, not needing an application for planning permission.

Permitted development rights allow for air source heat pumps to be installed on detached houses or blocks of flats without the need for planning permission, providing certain conditions are met. These conditions have been set to ensure that any negative impacts such as visual impact and noise are kept to a minimum.

Air source heat pumps are classed as permitted development if they meet the following limits:

- The heat pump complies with the Microgeneration Certification Scheme¹⁶ (MCS) Planning Standards (or equivalent).
- No other air source heat pump or wind turbine has been installed on the building (additional installations will require planning permission).
- The outdoor unit should be no bigger than 0.6 cubic metres and at least 1 metre away from the site boundary.
- Air source heat pumps installed on a flat roof should be within 1 metre of the roof edge.
- Air source heat pumps installed on a pitched roof would require planning permission.

The MCS sets a permitted development noise limit of 42dB(LAeq5min) at all sensitive receptors. As a general rule, all permitted and non-permitted installations should aim to achieve this limit, which can be demonstrated by calculation. For installations which are unable to achieve the objective, or in very quiet areas where background noise levels are exceptionally low, a full noise assessment will be required. The noise assessment should provide details of the source noise 1m from the façade of any sensitive receptor in all third octave bands between 63Hz and 8KHz and be assessed against measured background levels when the source is most likely to cause a noise disturbance.



4.9. CONSTRUCTION/DEMOLITION

Noise from construction or demolition works can be intrusive or disruptive to local businesses and residents. For this reason construction or demolition activities should be restricted to daytime periods and have defined start and finish times. All noisy works (i.e. those that are audible beyond the site boundary) should be restricted to the following hours to minimise disruption:

- Monday to Friday: 08:00 -18:00hrs
- Saturday: 08:00 - 13:00hrs
- Sunday / Public holidays: No working

These restrictions should also apply to deliveries/ collections to the site. Relaxation in these hours may, at times, be permissible depending upon central government guidance, such as that issued relating to construction hours during the Covid-19 pandemic.

By utilising set working hours for activities, as well as deliveries to the site, respite is provided for local residents and businesses near to the development. Noise and disruption to local residents will occur during development works, so it is important to remember that neighbours may not necessarily be in favour of the development or all aspects of it. By keeping an open dialogue and attempting to placate any complaints or grievances, the development is likely to progress more efficiently.

For larger developments or developments that are likely to progress over a long period of time, a Construction Management Plan (CMP) shall be required to be submitted to, and approved by the Council. This should contain a noise & vibration section, a community consultation strategy and working hours amongst other nuisance-related topics.

4.10. OTHER POTENTIALLY NOISY ACTIVITIES

There are various noise sources which do not fall into the specific categories listed above and/or are not covered by recognised standards. Any noise source that may impact on sensitive receptors should be assessed as part of a planning application, these could include:

- Motor car/bike tracks/speedways
- Skate parks/playgrounds
- Sports grounds
- Gyms
- Car parks
- Dog kennels/dog exercise fields

It is recommended that pre-application discussions are held with the Environmental Protection Team if any noise-generating uses are considered for development. The list above is far from exhaustive; however it highlights some of the applications that have been considered with particular attention to noise in the past. If there is any doubt over whether noise issues may need to be addressed prior to submitting a planning application, please contact us.

Where no relevant standards exist to guide an acoustic assessment, the assessment should include:

- Comprehensive measurement of examples of the noise source from existing sites operating elsewhere
- Comparison and verification of measured data against existing data sources where possible (e.g. from scientific literature or international standards)
- Assessment of the existing background level at the receptor location
- Calculation of the predicted specific noise level at the façade, gardens and amenity areas of sensitive receptors, based on relevant obtained data
- Comparison of noise levels to relevant general standards such as WHO standards and BS8233:2014
- Full consideration of the impact of LAFmax noise (for example from door slams, ball strikes, shouts or whistles)
- Consideration of the character/tonality of the noise and whether this may exacerbate the impact on amenity
- Full consideration and reporting of assessment uncertainty





GLOSSARY

APPENDIX

GLOSSARY

Term	Definition
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dB Decibel	Decibels are not an absolute unit of measurement; they logarithmically express a ratio between two quantities. In this guidance dB refers to Decibels of Sound Pressure relative to a reference value of 2 X 10-5 Pascals.
Hertz (Hz)	The frequency or pitch of a sound. 1 Hz = 1 cycle per second, 1 kHz = 1000 Hz, 2 kHz = 2000 Hz, etc.
LAeq	A-weighted equivalent continuous noise level. A single sound level with the same energy content over a given time period as the varying acoustic signal measured
LAFmax	A-weighted, fast, maximum, root mean squared (RMS) sound level.
L10	A statistical noise measure to show the noise level exceeded for 10% of the measurement period.
L90	A statistical noise measure to show the noise level exceeded for 90% of the measurement period, often referred to as the background noise level.
NR Noise Rating Curves	A method for rating the acceptability of indoor environments for the purposes of hearing preservation, speech communication and annoyance, based on curves developed by Kosten and van Os (1962).
Sensitive Receptor	Any receptor that may be adversely affected by the noise or vibration in question. In most cases this would refer to residential dwellings, schools, hospitals etc. but may also refer to sites which may be adversely affected for other reasons (for example containing equipment sensitive to noise or vibration).

APPENDIX 1 - NOISE REPORT AUDIT SHEET

NOISE REPORT AUDIT SHEET

This initiative was developed by representatives of the Hampshire and IOW Environmental Control Advisory Committee (ECAC) and Institute of Acoustics Southern Branch.

Client Brief

This should include the scope of the study requested by the client and any limitations imposed. It is important to identify at what stage the consultant was employed, particularly where the ProPG guidance applies. Where an assessment has been conducted following the design phase this should be acknowledged and any implications clearly identified.

Liaison performed with LA

Early engagement with the Local Authority (LA) is encouraged so the scope, objectives and relevant assessment methodologies and limitations can be agreed at an early stage. The principles agreed during this consultation should be clearly and fairly summarised, on matters such as the methodology, the basis for the assessment and discussions of typicality and pessimism. If no engagement has been possible, reasons should be given e.g. short timescale, unable to contact, instructed not to contact by client.

Site history

This should enable the report to be reviewed on its own merits rather than requiring reference to other information. The site should be identified with relevant constraints and a synopsis of planning, licensing and complaints history provided.

Current and potential future acoustic environment identified

This should include operational conditions and restrictions, including operational hours and safety constraints. When assessing impacts from the existing noise environment consideration needs to be given to typical noise levels generated by a specific planning use class, even if these are not currently occurring (e.g. a nearby factory closed at the time of monitoring). Any elements which are clear prerequisites should be identified for consideration as a condition.

Identification of relevant legislative framework

The reason for the report should be identified for example, supporting a planning application, resolving a nuisance issue, licensing application (e.g. live music event). This should inform the assessment methodology.

Conceptual Model

The conceptual model sets out the logical basis for the assessment reported. It encompasses the detailed analysis of the relationship between noise sources and receivers, justifies any assumptions and should include consideration of uncertainty, sensitivity and validation of any calculation models used. Where possible recognised methodologies should be adopted such BS 4142:2014, ProPG Planning and Noise (2017) and BS8233:2014. However, this should not be at the exclusion of more case specific considerations, for example tranquillity issues within low background noise areas. Where the report supports a planning application full consideration should be given to any noise guidance/methodology set within the relevant LA's Local Plan and any supporting guidance.

Inclusion of reporting elements of BS4142:2014

This list of information to be reported is considered to be a comprehensive list of essential requirements for all noise reports not just those being conducted using this methodology.

Monitoring data fully representative

This should be covered under the assessment of the conceptual model but is worthy of specific consideration. It is important that the data collected is fit for purpose and has not been compromised by cost constraints. Where the dominant noise source affecting a background measurement is wind direction/ weather dependent, monitoring should be over a time period that ensures these influences have been fully assessed. Noise levels derived from manufacturer's data should be justified and full supporting data provided. When assessing impacts from new complex noise sources, consideration should be given to obtaining measurements from existing comparable plant. Where old noise monitoring data is being reused justification needs to be provided that this is still representative.

Raw data presented

Sufficient raw data should be presented for the report reader to satisfy themselves of the veracity of the data collection process and the subsequent analysis.

ADS included (where ProPG relevant)

Where an assessment relates mainly to impacts from transport noise upon a proposed new residual development then the assessment should follow that detailed within the ProPG Planning & Noise guidance. It must include an Acoustic Design Statement (ADS). The inclusion of an ADS for proposed developments falling outside of this guidance (e.g. those affected predominantly by industrial noise) is still to be encouraged.

Calculations and assumptions fully presented and justified

This can be summarised as 'show your workings'. It should be possible for the reader to fully audit all calculations from the data presented. Justification for any BS4142:2014 rating level derivations needs to be provided. The choice of assumed attenuation for windows open or closed needs to be fully explained and the difference between ventilation and overheating (thermal comfort) understood. This now covered with the ProPG Planning & Noise guidance and is considered a good guide for all such assessments irrespective of noise source. Where modelling has been performed key input assumptions need to be fully discussed and justified, such as topography, ground conditions and the source of any traffic data used.

Uncertainty assessment provided

This should be covered within the conceptual model assessment. For more information see BS4142:2014, Section 10.0 – Uncertainty

Clear recommendations and conclusions

These should be clearly structured, impartial and independent, dealing with the specific issues and referring back to the brief and LA engagement. Any need for further work or more detailed design considerations should be set out clearly, as should any suggested conditions.

Executive summary

A brief executive summary should be provided that clearly communicates the key points.

APPENDIX 1 - NOISE REPORT AUDIT SHEET

BRIEF DESCRIPTION	DESIGN INPUT

LIAISON WITH LA (NAME/DATE)	PRINCIPLES AGREED

CHECKLIST	PAGE NO(S)	COMPLIANCE		
		Y	N	N/A
Full site description/map provided				
Site history provided				
Current and potential future acoustic environment identified				
Identification of relevant legislative framework				
Conceptual model fully justified				
Inclusion of reporting elements of BS4142:2014 (Para 12 a to j)				
Monitoring data fully representative				
Raw data presented				
ADS included (where ProPG relevant)				
Calculations and assumptions fully presented and justified				
Uncertainty assessment provided				
Clear recommendations and conclusions				
Executive summary included				

Professional Statement - This report has been prepared independent of influence by the person(s) or instructing party, such that the technical content can be relied upon without knowingly containing altered, manipulated, fabricated or misrepresented data and it has been interpreted using reasonable care, professional knowledge and skill. The report adheres

with the principles required by the Institute of Acoustics in their Code of Conduct, and the work is within the author's (including secondary author if relevant) own area of knowledge and expertise. Where opinions have been expressed these represent true and complete professional opinions on the matters to which they refer.

Name Signed

Positon Dated

APPENDIX 2 - NOISE MANAGEMENT PLANS

A noise management plan may be required to demonstrate how noise will be effectively controlled to minimise disturbance.

It may include, for example:

1.

Management Control – effective and responsible management of the premises, detailing:

- Role of Managers, staff and stewards in control of noise at the premises
- Instruction, training and supervision of those employed or staff and stewards/ SIA staff to manage noise.

2.

The installation and operation of any sound limiting devices.

3.

Maintenance of any physical controls – e.g. ensuring windows and doors are kept closed/ managing acoustic lobbies.

4.

Consideration of the choice, location & orientation of speakers.

5.

Rules for the control of patrons, staff and traffic arriving and leaving at the premises.

6.

Use of signs to encourage patrons to leave premises quietly / respect neighbours.

7.

Restrictions on the use of gardens – times / drinks and controls for the prevention of anti-social behaviour that could cause noise disturbance.

8.

Controls concerning deliveries/ waste collections and disposal of refuse e.g. bottles.

9.

Liaison with public transport providers.

10.

Public/ resident Information – including communication



Winchester
City Council

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