

**Planning Guidance (Wales),
Technical Advice Note (Wales) 11,
Noise - October 1997**

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Introduction

1. This Technical Advice Note (Wales) (TAN) should be read in conjunction with 'Planning Guidance (Wales): Planning Policy'. Planning Guidance, Technical Advice Notes and circulars should be taken into account by local planning authorities in Wales in the preparation of development plans. They may be material to decisions on individual planning applications and will be taken into account by the Secretary of State and his Inspectors in the determination of called-in planning applications and appeals.

2. Documents listed in the Reference column in the margin provide information which should be read in conjunction with this TAN.

3. This note provides advice on how the planning system can be used to minimise the adverse impact of noise without

Reference

**Technical Advice
Note (Wales) 5,
'Nature
Conservation and
Planning', 1996**

**Technical Advice
Note (Wales) 8,
'Renewable
Energy', 1996**

**'Planning Guidance
(Wales): Planning**

placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. It outlines some of the main considerations which local planning authorities should take into account in drawing-up development plan policies and when determining planning applications for development which will either generate noise or be exposed to existing noise sources.

***Policy', 1996,
paragraphs 43-45***

***Noise Review
Working Party,
1990, HMSO
(ISBN 0 11 752343 7)***

4. Local authorities should adopt a corporate approach and ensure close co-operation between planning and environmental health departments when considering noise and noise generating developments.

The Development Plan

5. Where noise policies apply to the plan area as a whole, they should be set out in the same way as other general policies. Area specific noise policies may be useful in some circumstances. In such cases, the relevant boundaries should be illustrated on the proposals map. However, it will generally be inappropriate for a proposals map to show detailed noise contours as noise emissions may change significantly over time, (e.g. in the case of an aerodrome, operational changes may lead to significant variations in the impact of the noise on those living in the area).

6. Where it is particularly difficult to separate noise sensitive development from noisy activities, plans should contain an indication of any general policies which the local planning authority proposes to apply in respect of conditions or planning obligations.

Noise Exposure Categories for Residential Development

7. Noise Exposure Categories (NECs) (see Annex A) have been derived to assist local planning authorities in their consideration of planning applications for residential development near transport related noise sources.

Development Control

Noise generating development

8. Local planning authorities must ensure that noise generating development does not cause an unacceptable degree of disturbance. They should also bear in mind that if subsequent intensification or change of use results in greater intrusion, consideration should be given to the use of appropriate conditions.

9. Noise characteristics and levels can vary substantially according to their source and the type of activity involved. In the case of industrial development, for example, the character of the noise should be taken into account as well as its level. Sudden impulses, irregular noise or noise which contains a distinguishable continuous tone will require special

consideration. In addition to noise from aircraft landing and taking off, noise from aerodromes is likely to result from engine testing as well as ground movements. The impact of noise from sport, recreation and entertainment will depend to a large extent on frequency of use and the design of facilities. Advice on assessing noise and on factors to consider in relation to the major noise sources including roads, railways, airports, industrial and recreational noise and their measurement is given in Annex B.

Noise-sensitive development

10. Local planning authorities should consider whether proposals for new noise-sensitive development would be incompatible with existing activities, taking into account the likely level of noise exposure at the time of the application and any increase that may reasonably be expected in the foreseeable future. Such development should not normally be permitted in areas which are, or are expected to become, subject to unacceptably high levels of noise and should not normally be permitted where high levels of noise will continue throughout the night.

Measures to mitigate the impact of noise

11. Measures introduced to control the source of, or limit exposure to, noise should be proportionate and reasonable, and may include:

- i. engineering: reduction of noise at point of generation (e.g. using quiet machines and/or quiet methods of working); containment of noise generated (e.g. insulating buildings which house machinery and/or providing purpose-built barriers around sites); protection of surrounding noise-sensitive buildings (e.g. improving sound insulation in these buildings and/or screening them by purpose-built barriers);
- ii. lay-out: adequate distance between noise source and noise-sensitive building or area; screening by natural barriers, other buildings, or non-critical rooms in a building;
- iii. administrative: limiting operating time of noise source; restricting activities allowed on the site; specifying an acceptable noise limit.

12. Early consultation with the applicant about the possible use of such measures is desirable and may enable them to be incorporated into the design before a proposal is formally submitted for determination. Alternatively, a local planning authority may impose conditions. Conditions which set noise limits raise particular issues on which guidance is given in Annex D.

13. There may be circumstances when it is acceptable, or even desirable in order to meet other planning objectives, to allow noise generating activities on land near or adjoining a

**Welsh Office
Circular 35/95,
'The Use of
Conditions in
Planning
Permissions'**

noise-sensitive development. In such cases, local planning authorities should consider the use of conditions or planning obligations to safeguard local amenity. Care should be taken to keep the noisiest activities away from the boundary or to take measures to reduce the impact of noise. Authorities should also take into account the fact that the background noise level in some suburban and rural areas is very low, and the introduction of noise generating activities into such areas may be especially disruptive.

14. Where an authority's planning objectives cannot be achieved by imposing a planning condition, because for example, they require the developer to make a financial contribution, or they relate to development, roads or buildings other than those covered by the planning application, it may be appropriate to enter into a planning obligation.

***Town and Country
Planning Act 1990,
Section 106, as
amended by the
Planning and
Compensation Act
1991, Section 12***

***Welsh Office
Circular 13/97
'Planning
Obligations'***

15. The granting of planning permission does not remove the need to comply with additional statutory powers to control noise (see Annex E).

Cancellation

16. Welsh Office Circular 16/73, 'Planning and Noise' is cancelled.

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GLOSSARY

Below are explanations (but not definitions) of terms used in this advice:

Aerodrome: any area of land, water or space on the roof of a building, which is commonly used to provide facilities for the landing and departure of aircraft - including types capable of descending or climbing vertically. The term is generic and embraces other terms such as airport, airfield and heliport. For a formal definition see the Civil Aviation Act 1982.

Decibel (dB): a unit of noise level derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is 20 μ Pa, the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.

dB(A): decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).

Hertz (Hz): unit of frequency, equal to one cycle per second. Frequency is related to the pitch of a sound.

$L_{A10, \tau}$: the A weighted level of noise exceeded for 10% of the specified measurement period (T). It gives an indication of the upper limit of fluctuating noise such as that from road traffic. $L_{A10, 18h}$ is the arithmetic average of the 18 hourly $L_{A10, 1h}$ values from 06.00 to 24.00.

$L_{A90, \tau}$: the A weighted noise level exceeded for 90% of the specified measurement period (T). In BS 4142: 1990 it is used to define background noise level.

$L_{Aeq, \tau}$: the equivalent continuous sound level - the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period (T). $L_{Aeq, \tau}$ is used to describe many types of noise and can be measured directly with an integrating sound level meter. It is written as L_{eq} in connection with aircraft noise.

L_{Amax} : the highest A weighted noise level recorded during a noise event. The time weighting used (F or S) should be stated.

Noise and Number Index (NNI): A composite measure of exposure to aircraft noise that takes into account the average peak noise level and the number of aircraft in a specific period. Now generally superseded by L_{eq} .

Noise index: a measure of noise over a period of time which correlates well with average subjective response. Additional information may be found in BS 7445: 1991.

Rating level: the noise level of an industrial noise source which includes an adjustment for the character of the noise. Used in BS 4142: 1990.

R_w : single number rating used to describe the sound insulation of building elements. It is defined in BS 5821: 1984.

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Annex A

NOISE EXPOSURE CATEGORIES FOR DWELLINGS

A1. When assessing a proposal for residential development near a source of noise, local planning authorities should determine into which of the four noise exposure categories (NECs) (Table 1) the proposed site falls, taking account of both day and night-time noise levels. Local planning authorities should then have regard to the advice in the appropriate NEC, as below:

TABLE 1: NOISE EXPOSURE CATEGORIES	
A	Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as desirable.
B	Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection.
C	Planning permission should not normally be granted. Where it is considered that permission should be given, for example, because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
D	Planning permission should normally be refused.

A2. A recommended range of noise levels is given in Table 2 for each of the NECs for dwellings exposed to noise from road, rail, air and mixed sources. However, in some cases it may be appropriate for local planning authorities to determine the range of noise levels they wish to attribute to the various NECs. Where there is a clear need for new residential development in an already noisy area some or all NECs might be increased by up to 3 dB(A) above the recommended levels. In other cases, a reduction of up to 3 dB(A) may be justified.

Table 2: RECOMMENDED NOISE EXPOSURE CATEGORIES FOR NEW DWELLINGS NEAR EXISTING NOISE SOURCES

Noise Levels⁽¹⁾ corresponding to the Noise Exposure Categories for New Dwellings $L_{Aeq,T}$ dB

Noise Source		Noise Exposure Category			
		A	B	C	D
road traffic	0700-2300	<55	55-63	63-72	>72
	2300-0700 ⁽²⁾	<45	45-57	57-66	>66
rail traffic	0700-2300	<55	55-66	66-74	>74
	2300-0700 ⁽²⁾	<45	45-59	59-66	>66

air traffic ⁽³⁾	0700-2300	<57	57-66	66-72	>72
	2300-0700 ⁽²⁾	<48	48-57	57-66	>66
mixed sources ⁽⁴⁾	0700-2300	<55	55-63	63-72	>72
	2300-0700 ⁽²⁾	<45	45-57	57-66	>66

Notes

⁽¹⁾ **Noise levels:** the noise level(s) ($L_{Aeq,T}$) used when deciding the NEC of a site should be representatives of typical conditions.

⁽²⁾ **Night-time noise levels (2300-0700):** sites where individual noise events regularly exceed $82dB_{LAmax}$ (S time weighting) several times in any hour should be treated as being in NEC C, regardless of the $L_{Aeq,8H}$ (except where the $L_{Aeq,8H}$ already puts the site in NEC D).

⁽³⁾ **Aircraft noise:** daytime values accord with the contour values adopted by the Department of Transport which relate to levels measured 1.2m above open ground. For the same amount of noise energy, contour values can be up to 2 dB(A) higher than those of other sources because of ground reflection effects.

⁽⁴⁾ **Mixed sources:** this refers to any combination of road, rail, air and industrial noise sources. The "mixed source" values are based on the lowest numerical values of the single source limits in the table. The "mixed source" NECs should only be used where no individual noise source is dominant.

To check if any individual noise source is dominant (for the purposes of this assessment) the noise level from the individual sources should be determined and then combined by decibel addition (remembering first to subtract 2 dB(A) from any aircraft noise contour values). If the level of any one source then lies within 2 dB(A) of the calculated combined value, that source should be taken as the dominant one and the site assessed against the appropriate NEC for that source, rather than using the "mixed source" NECs. If the dominant source is industrial noise see paragraph B17 of Annex B.

If the contribution of the individual noise sources to the overall noise level cannot be determined by measurement and/or calculation, then the overall measured level should be used and the site assessed against the NECs for "mixed sources".

A3. The NEC noise levels should not be used to assess the impact of industrial noise on proposed residential development because the nature of this type of noise, and local circumstances, may necessitate individual assessment and because there is insufficient information on people's response to industrial noise to allow detailed guidance to be given. However, at a mixed noise site where industrial noise is present but not dominant, its contribution should be included in the noise level used to establish the appropriate NEC.

A4. The NEC procedure is applicable where consideration is being given to introducing residential development into an area with an existing noise source, but not the reverse situation where new noise sources are to be introduced into an existing residential area. This is because the planning system can be used to impose conditions to protect incoming residential development from an existing noise source but, in general, developers are under no statutory obligation to offer noise protection measures to existing dwellings which will be affected by a proposed new noise source. Moreover, there would be no obligation on individuals with an interest in each dwelling affected to take up such an offer, and therefore no guarantee that all necessary noise protection measures would be put in place.

A5. Thus, where new industrial or commercial development is proposed near a residential area, the effect of the new noise source on the surrounding area will have to be assessed in accordance with existing procedures. In many cases where a new source of noise is to be introduced by a project that requires environmental assessment (EA) the effect of noise will be considered in this context; but it must be accepted that in these circumstances the options to control noise are likely to be more limited than where residential development is proposed in an area with an existing noise source. In the case of new roads and aerodromes, grant schemes may exist to provide insulation in specified circumstances.

Other noise-sensitive development

A6. Although developments such as offices, hospitals and schools will contain buildings and activities that are noise-sensitive, such developments are likely to occupy sizeable sites and contain a proportion of buildings and activities which are less noise-sensitive. The NEC principle cannot therefore be applied sensibly to such developments and it will be more appropriate to refer to specific guidance on internal noise standards in respect of each activity. General information can be found in BS 8233: 1987.

Noise index and measurement positions

A7. Different indices have been used to describe noise from different sources, and limits have been set over different time periods. This has caused confusion, and this advice follows the move towards consistency advocated in BS 7445: 1991 by expressing all noises in terms of $L_{Aeq,T}$. The recommended time periods are 0700-2300 and 2300-0700.

A8. Values in Table 2 refer to noise levels measured on an open site at the position of the proposed dwellings, well away from any existing buildings, and 1.2m to 1.5m above the ground. Where the arithmetic average of recorded readings falls on the boundary between NECs B and C it will be for the local planning authority to determine which is the more appropriate NEC for the proposal.

A9. Levels of noise from road and rail traffic are often specified at one metre from the facade, and these facade levels should be assumed to be 3 dB(A) higher than levels measured away from any buildings, unless a more accurate figure is available. For road traffic noise in NECs C and D, $L_{Aeq, 16h} \approx L_{A10, 18h} - 2$ dB.

A10. For aircraft, the noise levels refer to aircraft noise exposure contour values which are specified at 1.2m above the ground and published at 3 dB(A) intervals (each 3 dB(A) increment represents a doubling of noise energy). Because most aircraft noise originates from above, contours include the effects of ground reflection. (See note 3 at Table 2.)

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Annex B

THE ASSESSMENT OF NOISE FROM DIFFERENT SOURCES

Noise from road traffic

B1. For established roads it will be sufficient normally to base assessments on the current measured noise level (paragraph A8 of Annex A refers). When considering potential new development near major new, recently improved or altered (in width, level or direction) roads, local planning authorities should ascertain forecast noise levels (e.g. over the next 15 years) with the assistance of the local highway authority. In most cases highway authorities will have prepared predictions of the effects of traffic noise for the purposes of the Noise Insulation Regulations 1975 and the Noise Insulation Amendment Regulations 1988. Otherwise highway authorities should be consulted on the traffic flow data needed for the preparation of predictions in accordance with "Calculation of Road Traffic Noise" (Department of Transport (DOT) and Welsh Office, 1988). Use by highway authorities of traffic management schemes and powers in the Road Traffic Regulation Act 1984 may also be appropriate. Research undertaken by the Transport Research Laboratory for DOT indicates that structural damage to buildings through vibration from road traffic is unlikely. Advice is available in "Design Manual for Roads and Bridges Vol 11, Section 3, Part 7, - Traffic Noise and Vibration". But if vibration remains a concern, advice on acceptable levels can be found in BS 6472:1992, and advice on levels that may result in damage to structures in BRE Digest 353 "Damage to structures from ground-borne vibration".

Noise from railways

B2. Railway noise emanates from a variety of sources. For noise from operational railway lines the noise exposure categories in Annex A will be appropriate. Local noise from station activities, freight distribution depots, and marshalling yards should be treated in the same way as noise from industrial and commercial sources. Local planning authorities are advised to ask the developer to provide details of the present levels of noise, and to consult the railway operator to find out if there are proposals for significant operational changes.

B3. In considering the long distance traffic effects of developments which would result in the use of rail transport (for example, the carrying of aggregates from extraction sites, or goods from freight terminals), it will be appropriate to take into account the railway noise aspect.

B4. The likelihood of significant ground-borne vibration will depend on the nature of the ground and types of train. The possibility of vibration and re-radiated noise caused by trains running in tunnels should not be overlooked. Advice on acceptable levels of vibration can be found in BS 6472:1992.

B5. The "Noise Insulation (Railways and other guided transport systems) Regulations 1996", came into force on 1 March 1996, and are intended to provide equity with "The Noise Insulation Regulations 1975" (as amended) which apply to new roads. Technical guidance, the "Calculation of Railway Noise 1995", was made available at the same time.

Noise from aircraft

B6. For major aerodromes, Noise and Number Index (NNI) contours have been produced

for many years to aid development control. In September 1990 the Department of Transport adopted a new index and noise exposure contours are now expressed in terms of $L_{eq}dB(A)$ over the period 0700-2300. This index is equivalent to $L_{Aeq,T}$ used for other types of noise.

B7. Using forecast contours, it should be possible to determine approximately which areas are likely to fall within the different noise exposure categories. For small aerodromes local planning authorities should not rely solely on L_{eq} where this is based on less than about 30 movements a day.

B8. Recommended noise exposure categories for new dwellings exposed to aircraft noise are given in Annex A, but 60 $L_{eq}dB(A)$ should be regarded as a desirable upper limit for major new noise-sensitive development. Where replacement schools, clinics, and other community facilities are needed in high noise areas, to serve the existing population expert consideration of sound insulation measures will be necessary. When determining applications to replace schools and build new ones in such areas, local planning authorities should have regard to the likely pattern of aircraft movements at the aerodrome in question which could cause noise exposure during normal school hours/days to be significantly higher or lower than shown in average noise contours.

B9. Where land is, or is likely to become, subject to significant levels of aircraft noise, local planning authorities should determine approximately which areas are likely to fall within the different noise exposure categories. To do this, they will need to seek the co-operation of the aerodrome management to arrive at the most appropriate longer-term forecasts of air traffic (and its effect on the noise contours). The objective will be to achieve a clear and stable pattern of constraints against which development control policies can be formulated.

B10. Beyond the extremities of the published contours, noise will still be audible near the arrival and departure routes. The former are generally predetermined by the orientation of the runway and safety considerations; however, departure routes can usually be designed to avoid, as far as possible, noise in built-up areas. The use of these routes may change over time because of changes in aircraft mix and operations. The departure routes often comprise a wide corridor of tracks. Local planning authorities should consult National Air Traffic Services where appropriate. Where noise contours expressed in $L_{eq}dB(A)$ are not available, local planning authorities should approach the aerodrome management to secure early compilation of contours.

Military aerodromes

B11. The noise exposure categories should be used for assessing proposals for new developments near military aerodromes. Because many of these are in rural locations, there will often be the flexibility to ensure that new residential developments are located within noise exposure category A, while still taking full account of other planning constraints. This option will not apply to proposals for residential development involving extension, conversion, or change of use of existing buildings. When determining such applications local planning authorities should take account of the differences between civil and military operations. Military jet aircraft can generate very high noise levels particularly during take off, and occasionally the effectiveness of noise abatement flight procedures normally adopted may be limited by operational requirements. Changes in aircraft type and number of movements may also occur over a short period, resulting in unpredictable changes in noise levels. However, military flying is usually concentrated into weekday working hours when the public sensitivity to noise is at its lowest.

B12. For aerodromes where a Ministry of Defence (MOD) noise insulation grant scheme has been introduced, authorities will already hold an MOD map showing $L_{Aeq,T}$ contours. These are based on a 12 hour period, not a 16 hour period as is used at designated civil

aerodromes.

Helicopters and heliports

B13. When determining a planning application for a heliport the predicted noise should not be assessed in isolation - account should be taken of local circumstances including the existing level of noise disturbance in the area surrounding the site and factors such as whether the area is already exposed to noise from fixed wing aircraft. Local planning authorities will need to consider the effect of further disturbance resulting from the proposal.

B14. Helicopter noise has different characteristics from that of fixed wing aircraft, and is often regarded as more intrusive or more annoying by the general public. Noise exposure categories should be applied with caution.

B15. Helicopter routes may be established over cities and near aerodromes, although often their use will not be mandatory. Planning applications for helicopter landing/taking-off facilities should be accompanied by information about the proposed take-off/landing flight paths and air traffic routes where appropriate. Preferably, these paths should have been discussed and agreed in principle with National Air Traffic Services (NATS). Where such information does not accompany the application, but is considered necessary, the local planning authority should request it and suggest that the applicant has discussions with NATS.

B16. Increased use of helicopters has led to movements from the gardens of private houses and from commercial premises, such as factories, offices and hotels. For safety reasons, helicopters may only operate from elevated sites if given special approval by the Civil Aviation Authority. All these movements can cause local annoyance. However, they may often be incidental or ancillary to the principal use of the land and as such do not generally require a separate planning permission. The construction of hardstanding, installation of landing lights etc., may be regarded as development requiring planning consent.

Noise from industrial and commercial developments

B17. The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS 4142: 1990. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the "rating level" defined in BS 4142. This "rating level" should be used when stipulating the level of noise that can be permitted. The likelihood of complaints is indicated by the difference between the noise from the new development (expressed in terms of the rating level) and the existing background noise. The Standard states that, 'A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance'. Since background noise levels vary throughout a 24 hour period it will usually be necessary to assess the acceptability of noise levels for separate periods (e.g. day and night) chosen to suit the hours of operation of the proposed development. Similar considerations apply to developments that will emit significant noise at the weekend as well as during the week. In addition, general guidance on acceptable noise levels within buildings can be found in BS 8233: 1987.

B18. Commercial developments such as fast food restaurants, discos, night clubs and public houses pose particular difficulties, not least because associated activities are often at their peak in the evening and late at night. Local planning authorities will wish to bear in mind not only the noise that is generated within the premises but also the attendant problems of noise that may be made by customers in the vicinity. Disturbance that can be

caused by traffic and associated car parking should not be underestimated.

Noise from wind turbines and wind farms

B19. Detailed guidance on noise from wind turbines is contained in Planning Guidance (Wales), Technical Advice Note (Wales) 8, 'Renewable Energy', Welsh Office, 1996, Annex A, paragraphs A28-A38.

Noise from construction sites

B20. Detailed guidance on assessing noise from construction sites can be found in BS 5228, parts 1-4. In particular, Part 1: 1984, "Code of practice for basic information and procedures for noise control" describes a method for predicting noise from construction sites as well as giving general advice.

Noise from recreational and sporting activities

B21. For these activities the local planning authority will have to take account of how frequently the noise will be generated and how disturbing it will be, and balance the enjoyment of the participants against nuisance to other people. Partially open buildings such as stadia may not be in frequent use. Depending on local circumstances and public opinion, local planning authorities may consider it reasonable to permit higher noise emission levels than they would from industrial development, subject to a limit on the hours of use, and the control of noise emissions (including public address systems) during unsocial hours. A number of sports activities are the subject of Codes of Practice. Some noise generating activities enjoy permitted development rights granted by Part 4 of Schedule 2 to the Town and County Planning (General Permitted Development) Order 1995, and so may not require specific planning permission provided that they occur on a temporary basis. However, this permission may be withdrawn by making a direction under Article 4 of the Order.

Noise from landfill waste disposal sites

B22. Conditions attached to waste disposal licences generally set limits on the amount of waste, frequency of deliveries and hours of operation, and prescribe screening requirements. These will have indirect effects on the amount of noise generated, but site licence conditions can also relate specifically to noise control in the interests of protecting the environment and local amenity. This will be particularly relevant when dealing with sites where the operator is working with the benefit of an Established Use Certificate (as defined in section 36(2) of the Environmental Protection Act 1990) or a planning permission not subject to a noise condition. Local planning authorities and waste regulation authorities should consult closely at an early stage when considering the need for specific noise controls to be imposed by appropriate conditions in any planning permission or in the subsequent site licence.

B23. The main sources of noise will be from vehicular movement, tipping operations, and site plant. Appropriate planning or licensing conditions might therefore relate to hours of working; with number and/or capacity of vehicles using the site and their points of ingress and egress; and the provision of acoustic screening and/or noise limits. Information on predicting the noise will be found in BS 5228: Part 1: 1984.

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Annex C

EXAMPLES OF PLANNING CONDITIONS

C1. Authorities should follow the guidance given in Welsh Office Circular 35/95 'The Use of Conditions in Planning Permissions'. Conditions should be used selectively. The examples below cannot cater for all situations. Planning departments may need expert advice, usually from environmental health departments, when considering the imposition of, and monitoring compliance with, some of these conditions.

C2. Comments in brackets () give additional information and do not form part of the planning condition.

Conditions to minimise the effect of noise on new noise-sensitive development

C3. Construction work shall not begin until a scheme for protecting the proposed [noise - sensitive development] from noise from the has been submitted to and approved by the local planning authority; all works which form part of the scheme shall be completed before [any part of] the [noise-sensitive development] is occupied.

(Authorities should give applicants guidance on the maximum noise levels to be permitted within or around the noise-sensitive development so as to provide precise guidelines for the scheme to be submitted).

C4. The building envelope of plot number(s)..... shall be constructed so as to provide sound attenuation against external noise, not less than dB(A), with windows shut and other means of ventilation provided.

(This condition is appropriate where, for example, individual dwellings need to be protected against external noise. The term building envelope is intended to include the external windows, doors, walls, and roof, through which noise could enter the building).

Conditions restricting use of an aerodrome or part of an aerodrome

C5. The total number of movements shall not exceed [] per [period of time], except in an emergency.

C6. Movements shall take place only between [hours of day] on [days of week], except in an emergency.

C7. The [development] hereby permitted shall not be used by any aircraft with an authorised weight exceeding [], except in an emergency.

C8. The total number of movements by aircraft exceeding [] maximum all-up weight shall not exceed [] in any [period of time].

(The maximum all-up weight of an aircraft is its weight when fully loaded).

C9. The runways shall not be used by [class of aircraft], except in an emergency.

(With definitions of class if necessary).

C10. The total number of 'touch and go'⁽¹⁾ movements shall not exceed [] per [period of time].

C11. 'Touch and go'⁽¹⁾ movements shall take place only between [hours of day] on [days of week].

C12. Auxiliary power units shall not be used between [hours of day] on [days of week].

(Auxiliary power unit refers to a small engine used to power the aircraft's primary systems when its engines are not running).

⁽¹⁾ 'touch and go' refers to a landing immediately followed by a take off, as in testing and training flights.

Condition restricting the use of industrial or commercial buildings⁽¹⁾

C13. The building shall be used for and for no other purpose (including any other purpose in Class of the Schedule to the Town and Country Planning (Use Classes) Order 1987 or in any provision equivalent to that Class in any other statutory instrument revoking and re-enacting that Order).

Conditions restricting noise emitted from industrial or commercial buildings and sites⁽¹⁾

C14. Before the use commences, the [specified building(s)] shall be insulated in accordance with a scheme agreed with the local planning authority.

(Authorities using this condition should advise the applicant on the degree of sound insulation considered necessary to achieve an acceptable external noise level).

C15. Before the development hereby permitted commences a scheme shall be agreed with the local planning authority which specifies the provisions to be made for the control of noise emanating from the site.

(These provisions could include physical and/or administrative measures).

C16. [Specified activities] shall not take place anywhere on the site except within [specified building(s)].

(The condition should describe precisely the activities to be controlled as well as the particular building(s) in which they are permitted to take place).

C17. The building shall be [constructed/adapted] so as to provide insulation against internally generated noise of not less than dB(A), with windows shut and other means of ventilation provided.

(Other methods of specifying sound insulation are given in BS 5821: Part 3: 1984).

C18. The level of noise emitted from the site shall not exceed [A] dB between [T] and [T] Monday to Friday and [A] dB at any other time, as measured on the [specified boundary/boundaries] of the site at [location(s) of monitoring point(s)].

**Specify: A - noise level expressed as $L_{Aeq, T}$ over a time period X (e.g. 1 hour)
T - time of day**

C19. The rating level of the noise emitted from the site shall [not exceed] [be lower than] the existing background noise level [determined to be [A] dB] by [more than] [at least] [B] dB between [T] and [T] Monday to Friday and [B] dB at any other time. The noise levels shall be determined at [the nearest noise-sensitive premises] [specified location(s)]. The measurements and assessment shall be made according to BS 4142: 1990.

**Specify: A - background noise level expressed as $L_{A90, T}$ over a time period T
B - noise level difference between rating level and background level
T - time of day**

⁽¹⁾ For industrial and commercial sites, local authorities may wish to consider imposing two types of planning condition, as detailed below. The first type (conditions C18 and C19) set a noise limit over a given period at a specified point - such as outside the nearest noise-sensitive building or at the site boundary. The second type (conditions C13-C17 and C20-22) specify the type of activity that may take place, any restrictions necessary on the hours of operation, and details of the construction and layout of the development.

The first type of condition allows the developer to achieve the required noise level in whatever way he considers most cost-effective - so it may be suitable for speculative developments. A further advantage is that it controls noise in the long term since any future changes within the development must be made in such a way that the limits are not exceeded. However, a disadvantage of this type of condition is that in order to ensure compliance, noise emissions must be monitored. Whilst monitoring may be costly and time-consuming this should not be regarded as sufficient reason for not using noise conditions where they are appropriate.

Compliance with the second type of condition is easier to check and they may prove more effective against certain noise problems. For example, conditions on the location of the access to the development may help to solve the problem of noise in neighbouring residential areas that arises from traffic (particularly heavy vehicles) generated by the development. But control of activity, construction and layout may prove less effective than noise limits in controlling noise resulting from future changes within the development. In practice, therefore, a combination of both types of condition may prove advantageous. This could entail the developer being given, at an early stage, target noise limits for use in drawing up a scheme of building and operation for the development. If a local planning authority is content that the proposals would satisfy these noise limits, the scheme could be incorporated into a planning condition.

C20. No [specified machinery] shall be operated on the premises before [time in the morning] on weekdays and [time in the morning] on Saturdays nor after [time in the evening] on weekdays and [time in the evening] on Saturdays, nor at any time on Sundays, Bank Holidays or Public Holidays.

C21. Before [any] [specified plant and/or machinery] is used on the premises, it shall be [enclosed with sound insulating material] [and] [mounted in a way which will minimise transmission of structure borne sound] in accordance with a scheme to be agreed with the local planning authority.

(Advice should be appended to the permission indicating the sound insulation required, or the maximum permitted noise level at a specified monitoring point).

C22. Notwithstanding the provisions of Article 3 of the Town and Country Planning (General Permitted Development) Order 1995, no further plant or machinery shall be erected on the site under or in accordance with Part 8 of Schedule 2 to that Order without planning permission from the local planning authority.

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Annex D

SPECIFYING NOISE LIMITS

D1. If a local planning authority wishes to impose a planning condition which will specify an acceptable noise limit from a new source, the following points should be considered.

Type of limit

D2. Depending on circumstances, it may be appropriate to set either:

- a. an absolute limit based on the average level of noise which should not be exceeded in a specified time period;
- b. a relative limit based on the permitted increase in noise level with respect to the background level. This is the approach used in BS 4142: 1990.

D3. Generally, relative limits are not appropriate where the permitted increase in noise over background is substantial - e.g. 15 dB or more. Because background noise varies during the day, the background noise level determined should be representative of a typical quiet period during the working day.

D4. Either type of limit may be a single value over the relevant period, or different values for, say day and night. It may be appropriate to set an evening value as well where the noise source lends itself to fine control.

D5. A noise limit which is close to the background level will be difficult to monitor and the advice given in BS 4142 should be followed. This is particularly important at quiet sites where the $L_{Aeq,T}$ may be 10 dB or more above the $L_{A90,T}$ - even when the noise source is not operating.

D6. The idea of setting an additional overriding maximum level is often attractive, but may be hard to enforce because with unattended monitoring stations it is difficult to exclude extraneous noises (which will increase the measured level). There may also be the administrative difficulty of dealing with occasional transient high noise levels from the site.

D7. Where the noise will only be produced inside buildings and the maximum frequency spectrum levels are known, it may be appropriate to set a standard for the sound insulation of a building envelope rather than a noise limit at an external monitoring point.

Noise index

D8. Because noises vary over time and have different characteristics many indices have been developed to describe noise levels. The equivalent continuous noise level over a time period T ($L_{Aeq,T}$) has emerged as the best general purpose index for environmental noise. For road traffic noise $L_{A10,18h}$ is still widely used; and to describe background noise $L_{A90,T}$ is appropriate. To describe the sound insulation of a component of a building envelope (e.g. a window) R_w (BS 5821: Part 3: 1984) is appropriate. It is more difficult to specify the insulation of the whole building envelope because the value depends on different insulation values for the various building elements such as windows, walls and roof structure, as well as the type of noise source and its location.

D9. These indices are explained in the Glossary. Additional information may be found in BS 7445: 1991.

Monitoring point(s)

D10. Normally the noise limit will be chosen to protect the nearest noise-sensitive premises and the best position for the monitoring point(s) will often be outside the sensitive premises. However, this does not mean that the monitoring point must always be close to the premises. Normally noise limits refer only to noise from the source under consideration and not to the total measured value which may include, for example, traffic noise. In situations where extraneous noise makes monitoring difficult it may be easier to monitor a suitably adjusted level at the boundary of the site instead of outside the premises to be protected. This approach requires that the noise level at the boundary monitoring point is a reliable indicator of the level at the building to be protected; this may not be the case if the noise source is mobile. Monitoring points should be accessible to all parties concerned.

D11. The noise level measured at a monitoring point will be affected by wind speed and direction, and temperature gradients, particularly when the monitoring point is remote (>30m) from the source. The size of these effects is hard to predict, and so measurements (or predictions) should be made under reasonably stable conditions. A suitable condition is a light wind with a vector component up to 2 m/s from source to receiver; this will increase the noise level by about 2 dB(A) compared with the no wind case.

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Annex E

INFORMATION ON OTHER NOISE CONTROL REGIMES

The Noise Act 1996

E1. The Noise Act 1996 which will be fully implemented during 1997, introduces new powers for local authorities to deal with complaints of night time noise from domestic premises. The Act creates a new night time noise offence, to be assessed against an objective standard, and a new procedure for dealing with the confiscation and forfeiture of noise making equipment.

The Noise and Statutory Nuisance Act 1993

E2. This Act gives local authorities powers to tackle noise caused by vehicles, machinery or equipment in the street where they are satisfied that the noise amounts to a statutory nuisance, and allows them to adopt provisions relating to the operation of loudspeakers in streets and the control of noise from audible intruder alarms on premises. It reinstates a power that local authorities had under the Public Health Act 1936 to recover expenses incurred in abating statutory nuisances by putting a charge on the premises where it is the owner of those premises that is or was responsible for the nuisance.

The Environmental Protection Act 1990

E3. Part III of the Environmental Protection Act 1990 (the 1990 Act) gives local authorities in England and Wales considerable and wide ranging powers to tackle noise problems. Where a local authority is satisfied that the noise emitted from any premises is prejudicial to health, or a nuisance, it must serve an abatement notice in respect of the nuisance or prohibit or restrict its occurrence or recurrence, and may also require the execution of such works and the taking of such steps as are necessary for this purpose.

E4. Section 82 of the 1990 Act also gives individuals the power to complain direct to a magistrates' court about a noise problem.

The Control of Pollution Act 1974

E5. Part III of the Control of Pollution Act 1974 (the 1974 Act) was largely repealed in England and Wales by the Environmental Protection Act 1990. However, those sections that are extant give local authorities powers to control noise from construction sites, and noise from loudspeakers in streets. The Act also introduced the concept of the Noise Abatement Zone (NAZ) which provides a more sophisticated means of controlling, and where justified, reducing noise from commercial and industrial premises, particularly in areas of mixed development. Although NAZs have been criticised for their complexity, and few have been designated in recent years, the powers available in such zones (for example noise reduction notices) remain a potentially useful means of tackling some types of urban noise problem.

Codes of Practice

E6. Under the 1974 Act the Secretary of State also has the power to prepare and approve Codes of Practice giving guidance on how best to minimise or reduce noise. Four Codes of Practice have been approved by the Secretary of State. These are:

Code of Practice on Noise from Audible Intruder Alarms	<i>HMSO 1982</i>
Code of Practice on Noise from Ice Cream Van Chimes etc.	<i>HMSO 1982</i>
Code of Practice on Noise from Model Aircraft	<i>HMSO 1982</i>
Code of Practice on Noise Control on Construction and Open Sites (BS 5228: Parts 1 and 3 Part 4)	<i>HMSO 1984</i> <i>HMSO 1986</i>

There are also a number of other codes offering advice on how to reduce the effects of noisy activities including the use of audible bird scarers and noise from pop concerts and off-road motorcycling. In addition, many of the governing bodies of sport have produced codes of conduct which are used when organising events, and these should be consulted when new sites are being selected. These codes do not have the force of law, but may be of assistance to local authorities and magistrates' courts in the exercise of their powers and functions under the 1974 and 1990 Acts.

By-laws

E7. Some noise sources may be controlled by by-laws made by local authorities, particularly certain kinds of noise taking place in streets or in parks and recreation grounds. There are also by-laws in some areas which cover other types of noise nuisance now subject to control under the 1974 or the 1990 Acts: such by-laws may still be valid, but no new by-laws of this kind are likely to be confirmed unless they can be shown not to duplicate existing legislation.

European Community Directives

E8. The European Community has issued directives focused on limiting noise from products, particularly modes of transport, construction equipment and other specific products such as lawnmowers and household appliances. The major directives are as follows:-

70/157 (as amended)	<i>Council Directive relating to the permissible sound level and the exhaust systems of motor vehicles.</i>
78/1015 (as amended)	<i>Directive on the permissible sound level and exhaust system of motorcycles.</i>
74/151 (as amended)	<i>Directive relating to certain parts and characteristics of wheeled agricultural or forestry tractors.</i>
79/113 (as amended)	<i>Directive relating to the determination of the noise emission of construction plant and equipment.</i>
84/532	<i>Directive on the approximation of the laws</i>

	<i>of the Member States relating to common provisions for construction plant and equipment.</i>
86/662	<i>Directive on limitation of noise from hydraulic excavators, rope-operated excavators, dozers, loaders and excavator loaders.</i>
80/51 (as amended)	<i>Directive on the limitation of noise from subsonic aircraft.</i>
84/538 (as amended)	<i>Directive on the approximation of the laws of the Member States relating to the permissible sound power level of lawnmowers.</i>
86/188	<i>Directive on the protection of workers from the risks relating to exposure to noise at work.</i>
86/594	<i>Directive on airborne noise emitted by household appliances.</i>

Building Regulations

E9. The Building Regulations 1991 impose requirements for sound insulation between dwellings. The Building Regulations 1991 Approved Document E (Resistance to the passage of sound) (ISBN 0 11 752315 1) gives practical guidance on how the required standards of sound insulation can be achieved.

E10. The Building Regulations 1991 came into force on 1 June 1992, and were extended to cover sound insulation between converted flats by including provisions that are as close to new build as is practical. The Government considers that the Building Regulations are the most appropriate means of control for sound insulation in such conversions, and should be used in preference to planning conditions. This does not preclude the use of conditions where planning approval is required for change of use to a noise activity (e.g. a conversion to a cafe, discotheque or other noisy undertaking) where dividing walls or a floor separate a dwelling from such a use.

Motor vehicles

E11. The Road Vehicles (Construction and Use) Regulations 1986 (as amended) contains safety and environmental standards for the construction and use of all classes of vehicle. In terms of noise, the Regulations include drive-by noise limits and test procedures for new vehicles, requirements for the design and use of vehicle horns, reversing and theft alarms and construction and marking requirements for original and replacement motor cycle exhaust systems. The use of a vehicle so as to cause excessive noise which could be avoided is also prohibited and any exhaust system must be maintained in good and efficient order and not altered so as to increase noise.

Noise at work

E12. The Noise at Work Regulations 1989, which are enforced by inspectors of the Health and Safety Executive (HSE), require employers to take a number of steps to protect employees from exposure to excessive noise.

Aircraft

E13. The manner in which aircraft may be flown is specified in Section 76 of the Civil Aviation Act 1982 and the Rules of the Air Regulations 1996. Under Section 76 of the Civil Aviation Act aircraft are exempt from action in respect of trespass or nuisance, including noise nuisance, as long as they comply with the provisions of any Air Navigation Order. Rule 5 of the Rules of the Air Regulations states that with certain exemptions an aircraft should not fly below 1500ft over congested areas or 500ft elsewhere, except when taking off or landing.

Temporary use of land

E14. Under Part 4 of Schedule 2 to the Town and Country Planning (General Permitted Development) Order 1995, certain temporary activities enjoy permitted development rights. These allow the land to be used for up to 28 days (14 days in the case of temporary markets/car boot sales and motor sports) in any one calendar year without the need to apply for planning permission. A local authority may make a direction under Article 4 of this Order which withdraws the general permission and so require anyone wishing to institute the particular use to make a specific planning application. If an Article 4 direction is to remain in force for more than six months, then the approval of the Secretary of State is necessary. Compensation may be payable if permission on a subsequent planning application is refused, or is granted subject to conditions, other than those imposed by the General Permitted Development Order.

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Annex F

STATUTORY INSTRUMENTS

The Noise Insulation Regulations 1975	<i>(SI 1975: 1763)</i>
The Education (School Premises) Regulations 1981 (to be revised)	<i>(SI 1981: 909)</i>
The Town and Country Planning (Use Classes) Order 1987 (as amended)	<i>(SI 1987: 764)</i>
The Town and Country Planning (Assessment of Environmental Effects) Regulations 1988 (as amended)	<i>(SI 1988: 1199)</i>
The Noise Insulation (Amendment) Regulations 1988	<i>(SI 1988: 2000)</i>
The Noise at Work Regulations 1989	<i>(SI 1989: 1790)</i>
The Building Regulations 1991	<i>(SI 1991: 2768)</i>
The Town and Country Planning (General Permitted Development) Order 1995	<i>(SI 1995: 418)</i>

BRITISH STANDARDS

- BS 5228: 1984 (parts 1-3), 1992 (part 4), Noise control on construction and open sites.
- BS 5821: 1984, Rating the sound insulation in buildings and of building elements.
- BS 8233: 1987, Sound insulation and noise reduction for buildings.
- BS 4142: 1990, Method for rating industrial noise affecting mixed residential and industrial areas.
- BS 7445: 1991, Description and measurement of environmental noise.
- BS 6472: 1992, Guide to evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz).

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