

GUIDELINES FOR NOISE CONTROL

1.0 INTRODUCTION

- 1.1. Paragraphs 4.86 and 4.87 of the Plan explain this Council's approach to the control of development in relation to noise. The text summarises the latest Government guidance contained in PPG24 "Planning and Noise". It also notes that this Council's existing approved guidelines for noise (following those produced by Surrey County Council) contain guidance on a wider range of uses and recommendations on appropriate sound attenuation levels, which is not found in PPG24. The Council's guidance will be applied in these circumstances where guidance is not otherwise found in PPG24.
- 1.2. This Appendix firstly sets out the Recommended Noise Exposure Categories for new dwellings near existing noise sources, as contained in PPG24. It goes on to set out the Council's additional guidance for noise control under 5 sections. Section 2.0, relating to noise from London (Heathrow) Airport has been prepared by the Borough Council. The subsequent sections set out guidance prepared by Surrey County Council, in consultation with Surrey Districts, in line with the commitment in the Surrey Structure Plan and are designed to give a consistent guide for environmental health and planning officers across the County. Those parts of the guidelines which are relevant to this Local Plan and the day-to-day exercise of the Borough Council's planning functions are reproduced below. Certain references are contained in the guidelines to Circular 10/73, which gave Government guidance on noise issues prior to PPG24.
- 1.3. It must be stressed that the guidelines in Sections 3.0 - 6.0 of this Appendix are not intended to be used as obligatory standards. Each case must be assessed on its particular circumstances which may involve special site factors and/or other policy considerations, and may mean that straightforward standard application of the criteria may not always be appropriate. Where the noise source involved exhibits unusual characteristics, the specialist advice of the County Engineer's Noise Control Section may be sought.
- 1.4. At the end of the Appendix in Sections 7.0 and 8.0, a 'noise barometer' and glossary are provided.

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 EXPOSURE CATEGORY			
NOISE SOURCE	A	B	C	D
Road traffic				
07.00 – 23.00	<55	55 – 63	63 – 72	>72
23.00 – 07.00 ²	<45	45 – 57	57 – 66	>66
Rail traffic				
07.00 – 23.00	<55	55 – 66	66 – 74	>74
23.00 – 07.00 ²	<45	45 – 59	59 – 66	>66
Air traffic³				
07.00 – 23.00	<57	57 – 66	66 – 72	>72
23.00 – 07.00 ²	<48	48 – 57	57 – 66	>66
Mixed sources⁴				
07.00 – 23.00	<55	55 – 63	63 – 72	>72
23.00 – 07.00 ²	<45	45 – 57	57 – 66	>66

Key to Noise Exposure Categories (NEC)

- 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 a desirable level.
- B Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.
- 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.

¹ **Noise Levels:** the noise level(s) (L_{aeqT}) used when deciding the NEC of a site should be representative of typical conditions.

² **Night time noise levels (23.00 – 07.00):** sites where individual noise events regularly exceed 82 dB L_{Amax} (S time weighting) several times in any hour should be treated as being in NEC C, regardless of the L_{Aeq8h} (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 19 of Annex 3.

2.0 CRITERIA FOR DETERMINING PROPOSALS FOR DEVELOPMENT IN AREAS SUBJECT TO NOISE FROM LONDON (HEATHROW) AIRPORT

NEW DWELLINGS

Maximum noise contour which affects site	Control Policy
66 Leq and above (50 NNI and above)	Development will be refused with the exception of the one for one replacement of dwellings and which must be constructed so as to provide a minimum sound attenuation in all habitable rooms of 35 dB.
63-up to 66 Leq (45-up to 50 NNI)	Permission not to be refused on noise grounds, subject to all buildings being constructed so as to provide a minimum sound attenuation in all habitable rooms of 25 dB.
60-up to 63 Leq (40-up to 45 NNI)	Permission not to be refused on noise grounds. However, attention is drawn to the marginal noise problem so that, if it is desired, measures can be undertaken in construction or conversion schemes to provide a minimum sound attenuation in all habitable rooms of 20 dB.

NEW SCHOOLS, HOSPITALS, OFFICES, FACTORIES AND WAREHOUSES

Level of Aircraft noise to which site is or is expected to be exposed	72 Leq & above (60 NNI & above)	66 up to 72 Leq (50 up to 60 NNI)	60 up to 66 Leq (40 up to 50 NNI)	57 up to 60 Leq (35 up to 40 NNI)
Schools	Refuse	Most undesirable. When, exceptionally it is necessary to give permission, eg for a replacement school, sound insulation should be required to a standard consistent with DfEE guidelines	Undesirable	Permission not to be refused on noise grounds alone
			Sound insulation to be required to Dept. for Education and Employment guidelines	
Hospitals	Refuse	Undesirable	Each case to be considered on its merits	Permission not to be refused on noise grounds alone
			Appropriate sound insulation to be required	
Offices	Undesirable	Permit	Permit but advise insulation of Conference Rooms depending upon position, aspect, etc.	
	Full insulation to be required			
Factories, warehouses, etc.	Permit (It will be for the occupier to take necessary precautions in particular parts of the factory depending on the processes and occupancy expected. But see PPG24 for control of new factories, etc. in relation to their noise emissions)			

NOTES

1. *Equivalent Continuous Sound Level (Leq).*
The Equivalent Continuous Sound Level (Leq) is the national steady level that has the same acoustical energy as a fluctuating noise source i.e. the Leq formula attempts to average out individual aircraft noise peaks with the duration of the event taken into account.

2. *Leq “Contour Maps”*
These maps are prepared by the Civil Aviation Authority (CAA) for the Department of the Environment, Transport and the Regions (DETR) for the area surrounding the Airport. The Leq contours for Heathrow Airport are the calculated Leq for the period 0600-2000 GMT from data obtained in the summer months. The Council’s Noise Policy is to be read in conjunction with up-to-date Contour Maps normally published annually by the DETR.

3.0 NOISE FROM INDUSTRIAL PREMISES AND OTHER FIXED INSTALLATIONS

- 3.1. DoE Circular 10/73 on "Planning and Noise" gives extensive advice on this area of noise control. When exercising their development control and local planning functions, local planning authorities (LPAs) should always seek to avoid the creation of situations in which the noise generated by new commerce/industry might result in annoyance for the occupants of existing developments (residential, schools, hospitals, etc.) in the vicinity of the new or revised commercial/industrial proposal. Correspondingly the LPA should always seek to avoid situations in which new residential or noise-sensitive development might be subject to the noise arising from existing industrial/commercial plant and machinery.
- 3.2. There will, however, be times when it is appropriate, or even desirable in order to meet other planning objectives, to allow some form of industrial or similar development near houses, etc. The need then, is to take every precaution to ensure that noise emitted by the development in question does not on the whole make the area a less pleasant place in which to live. Authorities should, as far as possible, operate their development control powers in such a way as to avoid increases in ambient noise levels affecting residential and other noise-sensitive development.
- 3.3. The following guidelines offer some practical advice and recommended noise levels for control in this area.
- 3.4. Circular 10/73 suggests the use of the Corrected Noise Level (or CNL) concept contained in BS 4142: 1967 (as amended 1975) in considering the effect of noise from industrial or commercial premises - both for proposed noisy development near housing and for proposed housing or other noise-sensitive development near existing noisy premises. Circular 10/73 suggests that where, by the standards established in BS4142, the noise from a proposed industrial development "is likely to give rise to complaints" it will hardly ever be right to give permission even if reasonable acoustic insulation is provided by the applicant or developer to noise affected residential windows and doors.
- 3.5. BS4142 is intended to meet the need for rating various noises of an industrial nature as these might affect people living in the vicinity of the noise source. It provides a method of measuring a noise and offers procedures to test whether or not the noise is likely to give rise to complaints in the community.
- 3.6. In general then a noise is liable to provoke complaints whenever its peak level exceeds, by a certain margin, that of the pre-existing background noise (usually defined as that A-weighted level exceeded for 90% of the relevant time period in the absence of the offending noise-the L90). Alternatively the noise could go on to provoke complaints regardless of background noise if its absolute level rose to exceed a certain absolute maximum peak value.
- 3.7. The method of rating a noise in BS4142 depends on the first of these principles, i.e. a comparison of the measured noise level (carefully corrected - hence CNL - to take account of its character, duration and frequency of occurrence) with the background

noise level (the L90) that existed in the community before the advent of the noise in question.

- 3.8. BS4142 was intended to apply solely to the noise generated by factories, industrial premises and to other fixed installations of a permanent or at least semi-permanent nature.
- 3.9. All community noise measurements are made out-of-doors at least 3.6 m. away from walls, buildings or reflective structures in the neighbourhood most likely to be affected by the noise; the rating technique does not claim to be suitable for application in the rooms within a building. All noise measurements are made in terms of the dB(A) unit with the dynamic characteristic of the monitoring sound level meter set to the slow position.
- 3.10. BS4142 predicts that complaints from a community may be expected if the CLN exceeds the measured (pre-existing) background noise level by 10dB(A) or more: differences of 5dB(A) are taken as being of marginal significance. If, exceptionally, the predicted CNL happened to be 10dB(A) below the measured background noise level then this could be taken as a positive indication that community complaints should not be expected to arise.
- 3.11. Clearly the relevant time of day must always be specified in such an analysis; BS4142 defines night-time as occurring between 2200 hours and 0700 hours and goes on to say that should a noise occur in both periods (day as well as night) then each should be considered separately. BS4142 does not separately define an evening period.
- 3.12. Circular 10/73 presents a few examples of the corrected noise levels that could give rise to difficulties in the community; a CNL = 75dB(A) will usually interfere with teaching in educational establishments and it will scarcely ever be justifiable to allow new development which is likely to have the effect of bringing the 'ambient level' above a CNL = 75dB(A) by day or by 65dB(A) by night at an existing noise sensitive development.
- 3.13. Circular 10/73 thus defines an 'ambient level' in the community in terms of CNL; it goes on to state that the LPA should beware that the gradual introduction of new noise sources into an area does not result in a 'creeping growth of the ambient noise level' and in the quality of the environment - even though each of the new sources, when taken separately, would not be liable to give rise to complaints and even though the expected noise from each of them is at a lower level than the existing ambient level for the area at the time the permission is granted.
- 3.14. For example the introduction of a single new noise source 4dB(A) lower than the existing ambient level would still increase the ambient by 1.5dB(A); the CNL is thus akin to the Leq in concept and can be manipulated in a similar fashion when calculations are performed.

4.0 CONTROL OF DEVELOPMENT IN AREAS AFFECTED BY TRANSPORTATION NOISE

- 4.1. There are three main sources of transportation noise which need to be taken into account in affected areas in considering development proposals - road, rail and aircraft. Criteria relating to aircraft noise around Heathrow are set out in Section 1 of this Appendix.
- 4.2. The guidelines are given for the three main categories of noise-sensitive development - housing, schools and offices. There are, of course, other types of noise-sensitive development, such as hospitals and churches, but it was not felt appropriate to indicate general guidelines for them as they occur relatively infrequently as development proposals, which should in any case be assessed on their individual merits. Criteria relating to traffic and rail noise is set out in tabular form between Section 5 and Section 6 of this Appendix.
- 4.3. Helicopter related facilities in the Borough are normally opposed. However, details of the controls for such activities are reproduced for information following the traffic and rail noise criteria.

5.0 CLAY PIGEON SHOOTING

- 5.1. Clay pigeon shooting is enjoyed by a growing number of participants and can provide income and employment in rural areas, but it is an inherently noisy sport that may annoy non-participants. The objective of these guidelines is to minimise such annoyance whilst allowing the sport to be pursued in a reasonable and considerate manner. They apply to practice and tuition sessions, as well as competition, and provide guidance for other recreational activities involving firearms, such as 'war games'.
- 5.2. Surrey is a densely populated county where the countryside is heavily used for informal recreation. Therefore, there are very few areas, if any, where clay pigeon shooting is unlikely to disturb anyone. If such a location is found, the guidelines may be relaxed. Local consultation and liaison are important in conjunction with careful site selecting and operation in general accord with the guidelines. Where an established site has been operating without causing complaint, or local agreement has been reached, there will normally be no need to require the pattern of use to be modified, unless external circumstances or the character of use alters significantly.
- 5.3. The guidelines cover the maximum noise exposure levels which would normally be acceptable, conditions towards an acceptable intensity of use at a shooting site, some supplementary advice and a summary of legal controls. However, compliance with these guidelines does not automatically mean that noise nuisance will not be adjudged to exist; nor will it be regarded as constituting a 'best practicable means' of defence under the Control of Pollution Act.

Guideline Noise Values

- 5.4. Local topography can affect noise attenuation rates through channelling, reverberation and reflection, concentrating noise and giving rise to greater levels than would be expected in free field situations. It is considered, therefore, that a more appropriate approach to noise control would be to set noise limits for sensitive locations rather than simply to quote separation distances.
- 5.5. It is suggested that the following free-field peak noise exposure levels are desirable and therefore should not be exceeded in the following situations:-

Noise Sensitive Locations

Houses, including domestic gardens, libraries, churches, hospitals - 60dB(A) FAST

Public Gardens - 65dB(A) FAST

Lanes adjacent to a Shoot, Public Footpaths, Bridleways, Commons and Open Spaces - 70dB(A) FAST

As a guide in terms of separation distance over flat farmland, the firing point should be at least 1,500 metres from a noise sensitive location. This distance may have to be increased directly in front of the shoot.

- 5.6. The higher second and third levels reflect the more temporary nature of any likely noise exposure in the situations envisaged. Both suggested peak values may well of course be some 20 to 30 dB(A) above pre-existing L90 background noise levels in more rural areas of Surrey on days without much wind.
- 5.7. Noise measurements with the IMPULSE meter setting may be used alongside dB(A) FAST meter readings. All measurements should be taken with the sound level meter at least 3.5 m. (11.8 ft.) from any reflecting surface, and at a height of 1.2 m. (3.9 ft.) above the ground.
- 5.8. Any prediction model should include the effects of a modest (2 m/s) positive wind. Particular attention should be paid to the potential effects of the prevailing wind at each location.

Advisory Conditions to Control Annual Number of Discharges

- 5.9. On Mondays to Saturdays shooting should only take place between the hours of 0930 and 1800 with a maximum event duration of four hours on any one day. No shooting should ever take place with the assistance of vehicle headlights.
- 5.10. Sunday is the most popular day for clay pigeon shooting, but it is also the most noise sensitive day of the week. Only three hour shooting sessions should ever be permitted on a Sunday. A session could either be in the morning or afternoon depending on local circumstances (for example nearby church services). Sunday shooting sessions should not begin before 1000 hours and should always be over by 1700 hours.

- 5.11. On Good Friday, Easter Sunday, Christmas Day and Remembrance Sunday no shooting whatsoever should take place at any site.
- 5.12. Shooting at a particular location should only take place at a separation of at least 21 days. This is regardless of how many individual clubs intend separately using a given facility for clay pigeon shooting.
- 5.13. During a particular session no more than six firing stands should be operational at any one time. A limit, in the region of 2,000 shots per day, should be imposed on the total number of rounds to be fire on a particular day. Consideration may be given to permitting a higher figure for occasional special events. Where there is a concentration of shooting sites within a restricted area, their overall impact should be taken into account.
- 5.14. Only cartridges satisfying the 'best practicable means' concept incorporated in the Control of Pollution Act should be permitted when a shoot is within 2 km. of noise sensitive premises. This precludes the use of most cartridges of East European manufacture.
- 5.15. At least 14 days before a first event is proposed at a particular location, notices should be posted on Parish Council notice boards as well as in the immediate area of the shoot venue. Notices should give the name and telephone number of the secretary (or an equivalent contact) in the organising club. Copies of the notice should always be sent to the relevant Environmental Health Department(s).
- 5.16. At a shoot all associated public address system announcements should be strictly controlled (in terms of both volume and directivity) to the satisfaction of local Environmental Health Department(s).

Notes on Number of Discharges

- 5.17. Two thousand shots per session are regularly experienced at Surrey clay pigeon shoots where 40 participants might typically discharge 50 shots each during the course of a session. This number of shots equates to 500 shots per hour on a typical weekday or Saturday. Clearly this intensity of shooting should never be exceeded on Sundays.
- 5.18. From experience with several shoots it appears that Leq (equivalent continuous sound level) values for the shooting period would fall approximately 14 dB(A) below the corresponding mean peak level in the area of principal guideline concern (i.e. 60 to 70 dB(A) FAST) with the level of activity referred to above.
- 5.19. As an alternative control on the number of daily discharges it may be appropriate to specify a maximum Leq (4 hour) level to be experienced at noise sensitive locations during a typical weekday or Saturday. The equivalent Leq (3 hour) level may be applied for Sunday sessions.
- 5.20. A condition may be applied containing shooting activity to a level whereby the associated Leq (4 hour) at a noise sensitive location should not exceed the pre-existing Leq (4 hour) by more than 3 dB(A) under similar meteorological conditions.

Alternatively the L90 (4 hour) level could be used as the pre-existing level and a different excess suggested.

Supplementary Advice

- 5.21. Clay pigeon shooting may cause less disturbance in winter with people being more likely to be indoors behind closed windows. Shooting sites where the noise is masked by continuous noise sources, such as a motorway, or an established shooting range, may result in less annoyance.
- 5.22. Barriers may help to reduce noise transmission, their effectiveness being dependent on height, length and position.
- 5.23. Gunfire can be distressing to animals, particularly during certain periods. Shoot organisers should bear this in mind and avoid sensitive locations or seasons.
- 5.24. At a shoot anyone whose role takes them regularly to within 15 to 20 metres of discharging guns must be provided with effective ear defenders; in order to prevent the certainty of hearing damage due to the impulsive noise peaks, organisers should strongly encourage the use of such equipment at appropriate times. The shoot organisers should always have available for loan ear defenders of an approved design (BS6344:1984) for those shoot participants who have none with them.
- 5.25. The conditions for vehicular access should be carefully assessed before selecting a site for clay pigeon shooting. Car parking on verges and general obstruction of roads, lanes, bridleways and footpaths should be avoided.
- 5.26. The regular build-up of lead from shot falling onto grazing land could lead to additional health problems in the longer term. The advice of the Local Water Authority and Environmental Health Department should always be sought by a landowner before permitting a club to use part of a farm for clay pigeon shooting.

Summary of Legal Controls

- 5.27. The Control of Pollution Act, 1974, Part 3, provides for either a Local Authority of the owner/occupier of premises to abate and/or prevent recurrence of noise amounting to a nuisance under the terms of Sections 58 and 59 respectively. Furthermore, a Local Authority is empowered to act where satisfied noise amounting to nuisance is likely to occur, and it is a statutory requirement for Authorities to cause the areas over which they have jurisdiction to be inspected for the purpose of determining how such powers should be exercised.
- 5.28. The Town and Country Planning General Permitted Development Order, 1988 (as amended) permits temporary use of land (other than a building or curtilage of a building) for the purpose of Clay Target Shooting on a maximum of 28 days in any calendar year. Should the use of land exceed 28 days, a planning permission from the Local Planning Authority under the Town and Country Planning Act, 1990, is required.
- 5.29. The Local Authority may apply to the Secretary of State for an Article 4 Direction for the purpose of revoking or varying the permitted development rights contained within

the Town and Country Planning General Permitted Development Order, 1988 (as amended), with respect to any area over which the Authority has jurisdiction.

- 5.30. Permanent works (such as the construction of barriers for controlling noise or the erection of other structures) require planning permission, and advice can be obtained from the Borough Council Planning Division in respect of the implications of the aforesaid legislation.
- 5.31. Quantitative limitations relating to the levels of noise emitted from a site may be applied in the form of conditions attached to any planning permission. (Similar conditions imposed as a result of statutory proceedings in respect of noise nuisance can also be applied.)
- 5.32. Shoot organisers should be aware of their duties to employees and other under the Health and Safety at Work Act, 1974, having specific regard to occupational noise and safe shooting practice.
- 5.33. The discharge of a firearm within 15.2 m. (50 ft.) of the centre of a highway may constitute an offence under the Highways Act, 1980.

6.0 WATER SKI-ING

- 6.1. Noise from future proposed water ski and jet ski operations in Surrey should be assessed against the pre-existing L90 background noise level. This index is less affected by a succession of individual noise events, such as over-flying aircraft, than is the corresponding Leq. This approach is consistent with other parts of Surrey Noise Guidelines and with British Standard 4142 and Planning Circular 10/73.
- 6.2. It is considered that the following free-field exposure values (due to boat operations alone) represent desirable maxima and should rarely be exceeded in the situations outlined below:-

Noise Sensitive Locations

Houses, including domestic gardens,
libraries, places of worship, hospitals, schools Leq (10 hr.) = 50 dB(A) by day

Public Gardens, including land with
public access for informal recreation Leq (10 hr.) - 55 dB(A) by day

Any acoustic modelling should include the effect of a modest (+2 m/s) positive wind whenever noise assessments are made around a stretch of water. Particular attention should be paid to the potential effects of the prevailing summertime wind at each community reception point.

Operational Times

- 6.3. Sunday is, as with many sports, the most popular day for water ski operations but it is also the day of the week when public expectations are highest in terms of peace and relative quiet in the countryside. It is therefore suggested that new water ski

operations should not commence on a Sunday before 1000 hours and should cease by 1800 hours. On weekdays and Saturdays the hours could be extended from 0930-1930, where acceptable, if this resulted in the cessation of or reduction in Sunday water ski-ing. Longer hours may be considered for locations where the Local Authorities are satisfied that there would be no unreasonable disturbance.

Controls

- 6.4. Should the local Environmental Health Officer judge that noise amounting to a statutory nuisance is generated by water ski operations, then the Local Authority and Magistrates' Courts have powers under the Control of Pollution Act to restrict such activities or to specify certain requirements designed to reduce the levels of noise emitted by the sporting activities.
- 6.5. The use of a site for water ski-ing for more than 28 days in a year would usually require planning permission. Operators are advised to check the position with the Borough Council's Planning Division. In granting a consent, the Local Planning Authority would consider the potential noise disturbance and impose conditions to reduce it to acceptable levels.
- 6.6. Local Authorities and Navigational Authorities have powers to make bye-laws prohibiting or restricting water ski-ing on certain water areas.

FOR EASE OF REFERENCE ON THE WEB SITE THE THREE TABLES SETTING OUT THE GUIDELINES FOR THE CONTROL OF DEVELOPMENT IN AREAS SUBJECT TO NOISE FROM VARIOUS SOURCES ARE SET OUT AS A SEPARATE SECTION OF APPENDIX 6

7.0 NOISE "BAROMETER" presenting average A-weighted sound pressure levels to be found in some representative noise environments

	<i>dB(A)</i>	
THRESHOLD OF PAIN	140	30 m. from military jet on take-off.
	120	Concorde take-off experienced overhead in Stanwell Moor.
	110	Typical peak level generated by rock group at full power in enclosed concert hall.
	100	Pneumatic drill @ 10 m. distance.
	90	5 metres from heavy goods vehicles accelerating at full power.
	80	7.5 metres from family car accelerating at full power
	75	100 metres from electric suburban train travelling at 80 kph on welded rails.
	70	10 m. from urban road carrying 1000 vehicles per hour at a mean speed (in either direction) of 50 kph with 10% heavies.
	65	Busy mechanised office environment.
	60	Conversational speech at 1.5 metres.
	55	Inside urban living room during the day with external traffic but with single windows closed.
	50	General office environment.
	45	Inside suburban living room during the day (single windows closed).
	40	Whispered conversation at 1.5 metres.
35	Country churchyard on a still day (no wind in trees).	
30	Typical bedroom at night.	
0	Threshold of hearing for young person.	

8.0 GLOSSARY TO APPENDIX 6

dB(A)	A decibel (dB) is a measure of sound pressure and the basic unit of noise measurement. The A-weighting filter network adjusts the electrical signal generated by the noise under investigation to give comparatively more emphasis to those frequencies that are detected most readily by the 'typical' human ear. Measurements to which this weighting has been applied are expressed in terms of the dB(A) unit. A change of 2 to 3 dB(A) is just perceptible to the average ear; a change of 10dB(A) is experienced as a doubling or halving of perceived loudness.
L(A)	This symbol is a modern representation of what has previously been expressed as a sound pressure level in dB(A). In either case the A-weighting factor indicates that the sound pressure level has been weighted (or modified) so as to reflect the performance of the 'typical' human ear.
L(A)max or L(A)peak	Either expression represents the peak A-weighted noise level experienced at a site during a particular survey period. Most of the energy associated with a noise event is concentrated within 10 dB(A) of the peak value. The peak duration term again refers to the time spent within 10 dB(A) of the same peak value.
Leq dB(A) or L(A)eq	Either expression represents the equivalent continuous sound level or the A-weighted level of a notionally steady noise that, over a defined period of time, would possess the same A-weighted acoustic energy as the actual time-varying noise signal under investigation.
L10dB(A) or L(A)10	Either expression represents that A-weighted noise level which is exceeded for just ten per cent of the period under examination. This A-weighted index is the one used in the UK to express road traffic noise exposures. The official DoE prediction document presents a technique where the traffic noise exposure is expressed as a facade value arithmetically averaged over the 18 weekday hours from 0600 to midnight. A facade value means that the notional microphone is placed exactly 1 m. from a window/door on the noise affected facade.
L90dB(A) or L(A)90	Again either expression represents that A-weighted noise level which is exceeded for ninety per cent of the period under examination. This A-weighted index is the only one used in the UK to represent the background noise level at a property.

KEY TO 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 a desirable level.
- B Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.
- 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.

APPENDIX 6

GUIDELINES FOR THE CONTROL OF DEVELOPMENT IN AREAS SUBJECTED TO NOISE FROM FREELY-FLOWING TRAFFIC

The guidelines on road noise are based on the advice in Circular 10/73. An internal noise level (L10) of 40 dB(A) can be regarded as a 'good' standard to achieve in new development. Over the 15 years prediction period advised, slightly increased noise will usually be experienced as a result of more traffic and deteriorating door and window seals.

TYPE OF DEVELOPMENT	FAÇADE L10(A) 18 HOUR NOISE EXPOSURE LEVEL 0600-2400 HRS.	>75	71-74	67-70	63-66	59-62	COMMENTS
RESIDENTIAL		Refuse ₁	Refuse ₁	Refuse ₁	Permissible with 26dB insulation to all living rooms and bedrooms; installation of ventilators layout/orientation dependent	Permission not to be refused on noise grounds alone.	Significant problems can exist in noise affected gardens, especially over 60dB(A). Any barrier effect from the dwelling structure itself should be utilised where possible.
SCHOOLS		Refuse	Refuse	Refuse	Undesirable, but when exceptionally considered essential to permit, then insulate throughout to 26dB standard on all noise affected facades	Permission not to be refused on noise grounds alone. Place noise sensitive classrooms on less affected facades if at all possible.	Problems of communication could exist on playing fields which should be sited after consultation with the Noise Control Section.
OFFICES		Refuse ₁	Permissible: comprehensive noise insulation required to a 34dB standard. Provide full mechanical ventilation package	Permissible: comprehensive noise insulation package to a 30dB standard including mechanical ventilation system	Permissible with suitable noise insulation package to a 26dB standard. Provide mechanical ventilation as required.	Permission not to be refused on noise grounds alone.	Place conference rooms and prestige offices on less affected facades wherever possible
NOTES:	Use dB(A) FAST meter setting		Pay particular attention to building orientation and internal layout of rooms				Maximum noise levels estimated within 15 years of proposed development should be applied.

1. Where it is considered essential to permit development in order to meet other planning objectives, insulate throughout to following specifications:-

- 38dB standard with mechanical ventilation (>75 L10 (18 hour) dB(A));
- 34dB standard with mechanical ventilation (71-74 L10 (18 hour) dB(A));
- 30dB standard with mechanical ventilation (67-70 L10 (18 hour) dB(A)).

2. Place workshops/kitchens/changing rooms etc. on most noise affected facades.

GUIDELINES FOR THE CONTROL OF DEVELOPMENT IN AREAS SUBJECTED TO RAIL NOISE

The approach of the guidelines is intended to achieve a normal internal noise level of 40dB(A) or less (24hr. Leq), in combination with internal peak levels from passing trains or just less than 60dB(A).

TYPE OF DEVELOPMENT	FAÇADE L10(A) 18 HOUR NOISE EXPOSURE LEVEL 0600-2400 HRS.	>75	71-74	67-70	63-66	59-62	COMMENTS
RESIDENTIAL		Refuse	Refuse ¹	Refuse ¹	Permissible stipulating 26dB insulation to all living rooms and bedrooms; installation of ventilators layout dependent.	Permission not to be refused on noise grounds alone.	Attempts should be made to utilise any potential 'barrier effect' arising from nearby dwelling structures.
SCHOOLS		Refuse	Refuse	Refuse	Undesirable, but when exceptionally considered essential to permit, then insulate all noise-affected facades to 26dB standard and provide full mechanical ventilation.	Permission not to be refused on noise grounds alone. Always place noise sensitive classrooms on less noise affected facades ²	Problems of communication could exist on playing fields during passage of trains.
OFFICES		Refuse ¹	Permissible: comprehensive noise insulation required to a 34dB standard for all private and general offices and provide full mechanical ventilation package.	Permissible: comprehensive noise insulation package to a 30dB standard including mechanical ventilation system.	Permissible with suitable noise insulation package to a 26dB standard. Provide mechanical ventilation as required.	Permission not to be refused on noise grounds alone.	Place conference rooms and prestige offices on less noise affected facades wherever possible.
NOTES:	Use dB(A) FAST meter setting		Ground borne vibration could be a problem within 15 metres of the nearest rail (BS 6472 & ISO 2631).	Startling effect of passing trains should be taken into account, particularly near tunnel portals and the end of cuttings.			Maximum noise exposure levels to be experienced within 15 years of proposed development should be considered where possible.

1. Where it is considered essential to permit development in order to meet other planning objectives, insulate throughout to following specifications:-

- 38dB standard with mechanical ventilation (>75 Leq(A) (24 hour) dB(A));
- 34dB standard with mechanical ventilation (71-74 Leq(A) (24 hour) dB(A));
- 30dB standard with mechanical ventilation (67-70 Leq(A) (24 hour) dB(A)).

2. Particularly on line carrying regular freight movements.

APPENDIX 6

GUIDELINES FOR THE CONTROL OF DEVELOPMENT IN AREAS SUBJECTED TO DAY-TIME HELICOPTER NOISE ARISING FROM HELI-PADS, HELI-PORTS OR HELICOPTER BASES.

The guidelines are intended only for application around heli-pads, heli-ports or helicopter bases. Areas under helicopter routes, which are subject to a greater degree of variation in speed and intensity and sometimes height, should be considered separately according to perceived nuisance levels.

TYPE OF DEVELOPMENT	AVERAGE MODE FREE-FIELD 12 HOUR NOISE EXPOSURE LEVEL	62-65 Leq (A)	58-61 Leq (A)	54-57 Leq (A)	50-53 Leq (A)	COMMENTS
RESIDENTIAL		Refuse	Only rounding off and infilling permissible. Insulate all living rooms to 26dB standard and all bedrooms to a 30dB standard; include full mechanical ventilation systems to all living rooms and bedrooms.	Only rounding off and infilling permissible. Insulate all living rooms to standard and all bedrooms to a 26dB standard; the installation of some specialist ventilation equipment should be considered for bedrooms when circumstances demand.	Undesirable where gardens, open space and recreational areas are likely to be affected by low flying helicopters in the vicinity of the facility. Noise peaks of 75dB (A) should always be avoided in such areas.	The incidence of blade slap generated by certain descending and manoeuvring helicopters can represent a unique problem in communities where low altitude overflights are experienced; holding points on the approach circuit can also give rise to such burst of impulsive noise. If, following flight trials certain impulsive peaks should be penalised, then a positive tonal correction should be applied (along the lines of BS 4142) on a sliding scale between 1 and 5dB(A).
SCHOOLS		Refuse	Only permit in exceptional circumstances; insulate all noise sensitive areas to a 30dB standard and provide appropriate mechanical ventilation as required.	Undesirable, but when exceptionally considered necessary to permit then insulate all noise sensitive areas to a 26dB standard; some mechanical ventilation will usually be required.	Permission not to be refused on noise grounds alone.	Problems of speech communication can exist on playing fields where air noise peaks exceed 65 to 70dB (A).
OFFICES		PERMIT WITH NOISE INSULATION MEASURES APPROPRIATE TO THE PARTICULAR WORKING AREA.				
NOTES:	Use dB(A) slow sound level meter setting					Always consider maximum movement predicted within 15 years of a proposed development.