Armagh
City and District Council...

Environmental Protection
Technical Advice Note (Version 1)

Acoustic Reports

October 2009

Guidance notes for developers and consultants

Produced by:
Environmental Health Department
(Environmental Protection)

Acoustic Reports

1.0 AIM

1.1 This short Guide has been produced to assist developers, agents and their consultants in meeting the requirements of Planning Conditions relating to noise.

1.2 In particular, Conditions may have been imposed requiring a consultant's Report on potential noise issues and this Guide is intended to ensure that the Report covers all the essential points. This will reduce the need for additional monitoring or other site work, and time consuming correspondence.

1.3 The Guide does not form part of any Planning Permission or Application and is for information purposes only.

2.0 INTRODUCTION

2.1 Where formal guidance and protocols have been produced, either from government or other authoritative sources, it is the policy of Armagh City and District Council that acoustic investigations should be carried out having regard to the relevant British Standards, legislation or other guidelines.

2.2 Some of the more commonly used Standards etc which may be applicable are as follows:

a) PPG 24 - Planning Policy Guidance (especially transportation noise)

b) BS 4142:97 - Rating of industrial noise affecting residential premises

c) BS 5228:84 - Construction site noise

d) BS 7445:91 - Measurement of environmental noise

e) BS 7385:93 - Measurement of vibration in buildings

f) Building Regulations - Sound transmission standards in buildings

The above is not an exhaustive list and guidance exists for many specific types of development including, for example, sports and leisure uses. A Consultant will be aware of the Standards which will apply to your particular development plans.

2.3 However, it is recognised that some investigations will not fit neatly into any of the published categories. Where, for whatever reason, there has been a need to depart from accepted protocols in compiling the Acoustic Report, this will be acceptable provided that:

a) the areas of such departure are clearly identified with reasons for the departure clearly explained and

b) alternatives proposed are backed by reasoned argument as to why formal guidance has not been applied and

c) it can be demonstrated that acoustic standards for the completed development will not be compromised as a result of departure from accepted standards.

3.0 PURPOSE OF NOISE CONDITIONS

3.1 The reason that Planning Conditions may have been imposed which require an Acoustic Consultant's Report are that there are concerns that either:

a) the proposed development will create noise which is likely to have an adverse effect on existing premises. (For example, new industrial use near existing residential development) or

b) the development may itself be noise sensitive and may be affected by existing noise sources. (For example, a proposed residential development near a motorway, railway, or industrial site).

3.2 The purpose of the Report is to determine whether or not the development is likely to be prejudiced by noise or to prejudice existing sites and, if so, the measures which may be necessary and possible in order to prevent noise problems from occurring at any time in the future.

4.0 SCOPE OF REPORT

4.1 In order to meet the requirements of paragraphs 3.1 and 3.2, above, the Consultants Report will have to address a number of points in order to create a complete picture of the way in which the development may proceed without giving rise to noise related problems.

4.2 These points will need to include, as appropriate:

a) The existing noise environment

b) Impact of noise sources

c) Hours and methods of working

d) The distance between noise source and receptor

e) Boundary noise limits

f) Building orientation and construction

g) Noise barriers and other noise attenuation measures

Each of these points will be described further in paragraphs 5.0 - 11.2, below.

5.0 EXISTING NOISE ENVIRONMENT

5.1 Before any judgement can be made on the likely impact of development, it will usually be necessary to have a full understanding of the existing noise 'climate'.

5.2 This is achieved by carrying out background noise monitoring over a period of time which is representative of and can be related to the day of the week and the time of day.

5.3 The results of such monitoring are typically expressed as 'LA90', which means the decibel level which is exceeded for 90% of the monitoring period, adjusted for the way in which the human ear perceives noise. The reason for the percentage approach is that short term, untypical noises (such as a vehicle passing) are excluded from the measurement figure. Only noise levels which persist for more than 90% of the monitoring period are counted.

It is important to record the 'average' LAeq noise level at the same time.

5.4 The length of the monitoring period will be a matter for the Consultant but will often be a series of measurements taken at various times of the day, each of around 10-20 minutes duration. It is **essential** that the 'worst case' levels should be included.

6.0 IMPACT OF NOISE SOURCES

6.1 A detailed knowledge of the noise source (or in the case of a proposed noisy development, the likely noise source) is also essential. This is because, generally speaking, noise levels in themselves are of less importance than the amount by which they exceed background noise.

6.2 Where the noise source already exists, it can be accurately measured and the impact can then be determined by comparing the measurement results against the figures obtained for background levels at a similar time of day.

6.3 If the proposal is to introduce a potential noise then it will help the Consultant to know full details of the processes involved, including any proposed traffic increases to the site.

7.0 HOURS AND METHODS OF WORKING

7.1 The working hours of the noise source, together with the working practices involved will be of crucial concern to the Consultant. However, where the proposal is for a noise sensitive development and the noise source already exists, it must be borne in mind that plant, machinery, working hours and practices may change for the worse, unless planning restrictions are already in place to prevent or limit such changes.

7.2 For potentially noisy developments, adjustments to working hours and practices may represent the best, or perhaps the sole method of control which would permit the development to proceed.

8.0 DISTANCE BETWEEN SOURCE AND RECEPTOR

8.1 The amount by which noise will reduce as distance from source increases can be predicted with a good degree of accuracy. The Consultant will need to know which parts of a building produce (or have the potential to produce) the highest noise levels as this will assist him in calculating the impact at various points as they affect the receptor.

8.2 In many cases, a properly calculated >buffer zone= between source and receptor will represent the most cost effective noise control measure.

9.0 BOUNDARY NOISE LIMITS

9.1 The setting of noise limits as Conditions on the Planning Permission is an accepted method of ensuring that impact is minimised. For potentially noisy new developments, the Consultant will be able to report on what restrictions would be appropriate and how they may be attained.
9.2 Where the proposed development is noise sensitive, the maximum levels which should be permitted at boundaries can be calculated, bearing in mind the background levels, times of day etc. Under most circumstances, there will be a need to protect all parts of sensitive properties from noise, including gardens.

10.0 BUILDING ORIENTATION AND CONSTRUCTION

10.1 The way in which a development is orientated and the methods of construction used will have an important bearing on the viability of the proposal, as both are accepted methods of noise reduction. These are issues which will affect both noisy and noise sensitive developments.

11.0 NOISE BARRIERS

11.1 Where land is scarce, an earth bund or other noise barrier may be useful, especially in combination with other control measures.

11.2 To be fully effective, the height and location must be carefully calculated and for noise sensitive developments it may first be necessary to take additional measurements to record predominant noise frequencies.

12.0 CONSTRUCTION NOISE

12.1 The short to medium term additional noise due to the construction phase of the development may be significant in terms of disturbance to neighbouring premises and this point should be addressed in the Report.

12.2 Whilst it is accepted that noise is an unavoidable feature of any construction, the developer will be expected to take all reasonable steps to minimise disturbance.

12.3 Such measures will include the use of plant and equipment which is as quiet as can reasonably be expected, and setting a pattern for work which will not involve noisy activities at unreasonable hours.

12.4 Where there are noise sensitive areas in the vicinity of the construction the usual working hours relating to noisy work are 8am to 6pm weekdays and 8am to 1pm Saturdays and no noisy work on Sundays or Bank Holidays.

13.0 VIBRATION

13.1 Certain developments, notably those in close proximity to railway lines, will require additional assessments to take account of vibration. The Consultant will advise whether this may be appropriate for a proposal.

14.0 NOISE MANAGEMENT PLANS

Noise Management Plans can be useful in providing more detail on on-site controls and good practice measures. They can also help support a planning application by demonstrating the commitment to minimize noise and alleviate concerns.

15.0 POST DEVELOPMENT MONITORING

Post Development Monitoring is encouraged to provide a validation exercise that the proposals and any controls do in fact comply with the planning permission. As part of an application it also shows commitment to remedying any unforeseen problems at an early stage.

16.0 FORMAT OF REPORT

16.1 In order to avoid delays caused by the need to raise questions relating to the Acoustic Consultant's Report, it is important that it should be suitably comprehensive.

16.2 Full use should be made of maps and plans and the precise location of monitoring points should be indicated.

16.3 It is important that full monitoring results are shown and, where necessary, accompanied by interpretation.

16.4 The methodology used and the calculations relating to attenuation by distance or barriers should be shown, together with any particular considerations such as orientation or special construction techniques. Where appropriate, a full specification of attenuation measures e.g. silencers should be submitted.

16.5 Where specific Standards have been applied, these should be quoted and the results of calculations compared with them.

16.6 A simplified checklist is produced at Appendix 1 and this should be used to ensure that all relevant information has been included in the Report.

APPENDIX 1

ACOUSTIC REPORT CHECKLIST

Please place a tick against one box for every item in each category, to indicate whether the relevant information has been included in the Report, excluded, or does not apply

Category	ITEM	YES	NO	Not Applicable
Introduction	Maps/Plans included			
	Description of Development			
	Guidance/Standards Quoted			
	Development is Noise Sensitive			
	Development is Potentially Noisy			
Scope	Existing Noise Environment			
	Impact of Noise Sources			
	Working Hours and Methods			
	Distance (Noise/Receptor)			
	Boundary Noise Limits			
	Building Orientation/Construction			
	Noise Barriers			
	Equipment Specification			
	Noise Management Plan			
Measurements	Ambient Noise (General)			
	Ambient Noise (Worse Case)			
	Barrier Height			
	Barrier Location			
	Relative Heights (Source/Receptor)			
	Frequency Analysis			
	Construction Phase Noise			
	Vibration			
	Post Development Monitoring (Validation)			

Other Considerations (please specify)

.....
.....
.....
.....
.....

17.0 SUBMISSION OF REPORT

17.1 Once completed and compared against the checklist at Appendix 1, the Consultant's Report should be forwarded to:

The Planning Service
Divisional Planning Office
Marlborough House
Central Way
Craigavon
BT64 1AD

18.0 LIST OF ACOUSTIC CONSULTANTS

16.1 Armagh City and District Council cannot recommend any particular consultant. Companies offering Consultancy services may be obtained from local telephone directories; the yellow pages www.yell.com or from the directory of organizations on www.noisenet.org

19.0 FEEDBACK

Any comments on this guide would be gratefully received and will inform future drafts.

Either write to the address below or email on:
Seamus.donaghy@armagh.gov.uk

Note: This note is for information purposes only and has been produced to assist those considering noise issues relating to planning applications. For further detail on specific proposals, speak to either Seamus Donaghy (Principal Environmental Health Officer) or Ciara Daly (Environmental Health Officer). As information and guidance develops, the content of the note may need to be revised and updated.

Produced by:
Environmental Health Department
Armagh City and District Council, Palace Demesne, Armagh BT60 4EL

Tel: 028 3752 9626