Appendix 2.1

Glossary of acoustic terminology

Abbreviation / technical term	Explanation
A weighted	Acoustics measurements are A weighted to take into account the unequal sensitivity of the human auditory system across the ear's frequency range. A weighted is denoted by 'A' in the descriptor.
AAWT	Average Annual Weekday Traffic. The total vehicular traffic travelling on a road in a year over the number of weekdays in a year
Background Noise Level, $L_{A90,T}$	The A weighted sound pressure level of the residual noise at the assessment position that is exceeded for ninety percent of a given time interval, T.
BPM	Best practicable means of carrying out construction works
CEMP	Construction Environmental Management Plan
CRTN	Calculation of Road Traffic Noise
dB(A)	The unit used to define a weighted sound pressure level, which correlates well with the subjective response to sound. The 'A' is in reference to A weighting, previously described. In some statistical descriptors the 'A' weighting forms part of a subscript, such as L_{Aeq}, for the 'A' weighted equivalent continuous noise level.
Decibel (dB)	The ratio of audible sound pressures is a ratio of 10^6:1 (one million:one). For convenience, therefore, a logarithmic measurement scale is used. The resulting parameter is called the 'sound pressure level' (L_p) and the associated measurement unit is the decibel (dB). As the decibel is a logarithmic ratio.
Equivalent Continuous Sound Level, L_{eq}	Another index for assessment for overall noise exposure is the equivalent continuous sound level, L_{eq}. This is a notional steady level which would, over a given period of time, deliver the same sound energy as the actual time-varying sound over the same period. Hence fluctuating levels can be described in terms of a single figure level.
Frequency	The number of repetitions per second of a complete waveform. The subjective equivalent in music is pitch. The unit of frequency is the Hertz (Hz), which is identical to cycles per second. A thousand hertz is often denoted kHz, e.g. 2kHz = 2000Hz. Human hearing ranges approximately from 20Hz to 20kHz. For design purposes, the octave bands between 63Hz to 8kHz are generally used. The most commonly used frequency bands are octave bands, in which the mid frequency of each band is twice that of the band below it. For more detailed analysis, each octave band may be split into three one-third octave bands or in some cases, narrow frequency bands.
L_{10}	Sound level exceeded for ten percent of the time
L_{90}	Sound level exceeded for ninety percent of the time
L_{Aeq}	A weighted equivalent continuous sound level
Maximum Noise Levels	The maximum noise level identified during a measurement period. Experimented data has shown that the human ear does not generally register the full loudness of transient sound events of less than 125ms. Fast time weighting has an exponential time constant of 125ms which reflects the ear's response. The maximum level measured with fast time weighting is denoted as $L_{AMax,\,f}$. Slow time weighting (S) with an exponential time

	constant of 1s is used to allow more accurate estimation of the average sound level on a visual display. Impulse (I) time weighting has a fast rise (35ms) and a slow decay and is intended to mimic the ear's response to impulsive sounds.
NSR	Noise sensitive receiver
Residual noise	The ambient noise remaining at a given position in a given situation when the specific noise source is suppressed to a degree such that it does not contribute to the ambient noise.
Sound Power Level	The sound power level (L_w) of a source is a measure of the total acoustic power radiated by a source. The sound power level is an intrinsic characteristic of a source (analogous to its volume or mass), which is not affected by the environment within which the source is located.
Sound Pressure Level	The sound power emitted by a source results in pressure fluctuations in the air, which are heard as sound.
Specific Noise Level, $L_{Aeq,Tr}$	The equivalent continuous A weighted sound pressure level at the assessment position produced by the specific noise source over a given reference time interval.
Statistical Noise Levels	For levels of noise that vary widely with time, for example road traffic noise, it is necessary to employ an index which allows for this variation. The L_{10}, the level exceeded for ten per cent of the time period under consideration, has been adopted in this country for the assessment of road traffic noise. The L_{90}, the level exceeded for ninety per cent of the time, has been adopted to represent the background noise level. The L_1, the level exceeded for one per cent of the time, is representative of the maximum levels recorded during the sample period. A weighted statistical noise levels are denoted L_{A10}, L_{A90} etc. The reference time period (T) is normally included, e.g. $dBL_{A10,\ 5min}$ or $dBL_{A90,\ 8hr}$.