Environmental Noise Solutions Limited

Suite 24
Doncaster Business Innovation Centre
Ten Pound Walk
Doncaster
DN4 5HX

Proposed Variation of Planning Condition (S73) for Commercial Development

Naylor Concrete, Whaley Road, Barugh Green, Barnsley, S75 1HT

Noise Impact Assessment

For: Naylor Concrete

11th May 2026

Ref: NIA-12561-26-12845-v3 Naylor Concrete

Author: J.Hayes BSc, AMIOA

Contents

1 Introduction

1.1 Overview

Environmental Noise Solutions Ltd (ENS) has been commissioned by Naylor Concrete to undertake a noise impact assessment in relation to a Section 73 application to extend operating hours at Naylor Concrete, Whaley Road, Barugh Green, S75 1HT (hereafter referred to as 'the site').

The site has operated as a concrete manufacturing facility since 2007 under planning approval 2007/0815. Condition 22 of the planning approval is as follows:

> *"22. There shall be no noise from the development site, including deliveries to and despatches from the site, audible at the site boundary between the hours of 6pm and 8am every day; and additionally between the hours of 1pm and 6pm on Saturdays and at any time on Sundays, Bank Holidays and Public Holidays.*
>
> *Reason: To protect the amenity of the occupiers/workers of neighbouring land and local residents."*

Manufacturing operations at the site are currently undertaken during the hours 0800-1800 on weekdays, and 0800-1300 on Saturdays, in line with the requirements of the planning condition. The Section 73 application seeks to extend the operating hours to include 0800-1800 on Saturdays and Sundays.

The objectives of the noise impact assessment were to:

- Determine the existing ambient and background noise levels in the vicinity of the site
- Establish the potential noise emissions associated with the development
- Assess the noise impact of the development on the nearest noise sensitive receptors (surrounding residential uses) in accordance with pertinent guidance
- Provide specific recommendations, where required, to avoid any potential for loss of amenity due to noise associated with the development

This report details the methodology and results of the assessment and provides recommendations for noise attenuation as appropriate.

The report has been prepared for Naylor Concrete for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult Naylor Concrete and ENS as to the extent to which the findings may be appropriate for their use.

A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

1.2 Site Description and Development Proposals

The site is located in a predominantly industrial area of Barugh Green, to the north-west of Barnsley. The site which is the subject of the Section 73 application is indicated (in red) in Figure 1.1 below.

Figure 1.1: Location of Development

The site is bounded by:

- Railway line to the north-east, with open land beyond
- Commercial and industrial businesses to the north-west (including mobile plant hire and aggregates suppliers)
- Whaley Road to the south-west, with car showrooms and other commercial uses beyond
- Various light commercial units to the south-east

The nearest noise sensitive receptors (NSRs) to the development are considered to be:

- NSR 1 – dwellings along Springfields, circa 175 metres to the south
- NSR 2 – dwellings along Coppice Avenue, circa 220 metres to the south-east

The ambient noise climate in the vicinity of the site was controlled by local and distant road traffic, commercial/industrial noise from surrounding sites also audible.

2 Policy Context and Assessment Guidance

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)[1] was updated in February 2025 and sets out the Government's planning policies for England and how these are expected to be applied.

Where issues of noise impact are concerned the NPPF provides brief guidance in paragraph 187 where it states that planning policies and decisions should contribute to and enhance the natural and local environment by:

'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of…..noise pollution'.

Paragraph 198 advises that:

'Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should…..mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life'.

The NPPF also refers to the 2010 DEFRA publication, the Noise Policy Statement for England (NPSE) which reinforces and supplements the NPPF.

2.2 Noise Policy Statement for England

The Noise Policy Statement for England[2] (NPSE) sets out the long-term vision of promoting good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development. This long-term vision is supported by the following aims:

- Avoid significant adverse impacts on health and quality of life
- Mitigate and minimise adverse impacts on health and quality of life
- Where possible, contribute to the improvement of health and quality of life

The NPSE describes the following levels at which noise impacts may be identified:

- NOEL – No Observed Effect Level. This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise
- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected
- SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur

According to the explanatory notes in the statement, where a noise level falls between the lowest observable adverse effect level (LOAEL) and a level which represents a significant observable adverse effect level (SOAEL):

'….all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur.'

1 National Planning Policy Framework. Ministry of Housing, Communities and Local Government (2024)
2 Government Department for Environment, Food and Rural Affairs. Noise Policy Statement for England. March 2010.

2.3 Planning Practice Guidance on Noise

Planning Practice Guidance[3] (PPG) is an online resource which provides additional guidance and elaboration on the NPPF. It advises that the Local Planning Authority should consider the acoustic environment in relation to:

- Whether or not a significant adverse effect is occurring or likely to occur
- Whether or not an adverse effect is occurring or likely to occur
- Whether or not a good standard of amenity can be achieved

In line with the Explanatory Note of the NPSE, the PPG references the LOAEL and SOAEL in relation to noise impact. It also provides examples of outcomes that could be expected for a given perception level of noise, plus actions that may be required to bring about a desired outcome. However, in line with the NPSE, no objective noise levels are provided for LOAEL or SOAEL although the PPG acknowledges that:

'...the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation'.

Table 2.1 summarises the PPG noise exposure hierarchy.

Table 2.1: PPG Noise Exposure Hierarchy

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

3 Planning Practice Guidance on Noise: http://planningguidance.planningportal.gov.uk/blog/guidance/noise/

The PPG also provides general advice on the typical options available for mitigating noise, suggesting that Local Plans may include noise standards applicable to proposed developments within the Local Authority's administrative boundary, although it states that:

'Care should be taken, however, to avoid these being implemented as fixed thresholds as specific circumstances may justify some variation being allowed'.

The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation. The following guidance documents provide some meaningful context.

2.4 BS 4142 'Methods for Rating and Assessing Industrial and Commercial Sound'

BS 4142:2014+A1-2019 'Methods for Rating and Assessing Industrial and Commercial Sound' (BS 4142)[4] describes methods for determining, at the outside of a building, noise levels from factories or industrial premises and a method for assessing whether the noise is likely to give rise to adverse impacts, and states:

'*The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. Typically, the greater this difference, the greater the magnitude of the impact. For example:*

A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context

A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context

The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context'

The rating level is described as the specific sound level (the equivalent continuous A-weighted sound pressure level at the assessment position (NSR) produced by the specific sound source over the given reference time interval) plus any adjustment for the characteristic features of the sound. The character correction relates to whether and to what degree the specific sound is assessed to have an element of tonality, impulsivity and/or characteristics that are readily distinctive against the residual acoustic environment.

The background noise level is the A–weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90 percent of a given time interval, T, measured using time weighting 'F' and quoted to the nearest whole number of decibels.

The reference time interval of the specific sound is 1 hour during the daytime and 15 minutes during the night-time.

4 British Standard 4142:2014+A1-2019 Methods for rating and assessing industrial and commercial sound, BSI (2014)

3 Noise Survey

3.1 Overview

A noise survey was undertaken at the site from Friday 13th through to Monday 16th March 2026.

For the purpose of the assessment, the following noise monitoring positions were adopted (see Appendix 2 for approximate locations):

- MP1 – long-term monitoring location on the site boundary
- MP2 – in the vicinity of NSR1
- MP3 – in the vicinity of NSR2

Noise measurements were undertaken at 1.5 metres above ground level in free field conditions using NTi Audio XL3 and Bruel & Kjaer 2250 Type 1 integrating sound level meters. The meters were connected to a windshield covered microphone positioned at the location detailed above. The measurement system calibration was verified immediately before and after the survey period using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration levels greater than 0.5 dB was noted.

The noted weather conditions during the survey were dry with average wind speeds < 5 m/s. Weather conditions were therefore considered appropriate for noise monitoring.

Measurements consisted of A–weighted broadband parameters including L_{Aeq} and L_{A90}, together with linear octave band L_{eq} levels.

3.2 Summary

Table 3.1 presents a summary of the noise data for each measurement session, rounded to the nearest decibel.

Table 3.1: Summary of Long-Term Noise Measurement Data

Position	Date	Time	$L_{Aeq,\,T}$ (dB)	L_{A90} (dB)	Comment
MP1	13/03/26	0930-2300	54	48	Noise levels driven by road traffic in absence of commercial noise from site.
	14/03/26	0700-2300	52	47	
	15/03/26	0700-2300	52	47	
	16/03/26	0700-1240	56	52	
	13-14/03/26	2300-0700	50	42	Noise levels driven by road traffic.
	14-15/03/26	2300-0700	46	37	
	15-16/03/26	2300-0700	51	43	
MP2	16/03/26	1001-1031	51	49	Distant road traffic dominant. Naylor Concrete operating but not audible.
		1112-1142	51	50	
		1400-1430	51	49	Distant road traffic dominant. Naylor Concrete not operating.
		1507-1537	52	49	
MP3	16/03/26	1036-1106	51	48	Distant road traffic dominant. Naylor Concrete operating but not audible.
		1148-1218	51	48	
		1435-1505	51	48	Distant road traffic dominant. Naylor Concrete not operating.
		1543-1613	52	48	

In the absence of activity at the site, noise levels at long-term measurement position MP1 were found to be broadly similar to measurements at MP2 and MP3 (adjacent to the receptors). As such, noise levels measured at MP1 over the proposed weekend operating hours are considered to be representative of the receptors.

Background noise levels were found to be driven by distant road traffic. The typical background noise level during the proposed weekend operating hours (0800-1800 hours) was **48 dB $L_{A90\ (15\ min)}$**. This value has been derived by selecting the modal $L_{A90,15min}$ during this period, in accordance with BS 4142:2014.

During attended measurements on weekdays at MP2 and MP3 (representative of the receptors), it was noted that no noise from existing operations at Naylor Concrete was audible. Noise measurements were undertaken at the receptor locations during manufacturing operations (circa 1000-1200 hours), and after operations had finished for the day (circa 1400-1600). Noise levels were consistent throughout, and were not affected by existing operations at Naylor Concrete.

3.3 Noise Associated with the Site

In order to establish the noise levels associated with the existing operations at the site, short-term noise measurements were undertaken in close proximity to typical activities. Measurements were made at 1.5m above ground level using a calibrated B&K 2250 Type 1 sound level meter on Friday 13th March 2026.

The noisy equipment and processes associated with the site include cutting and casting machinery (located in building), and batch plant (located externally). Casting machinery is used to lay mixed concrete in large slabs. Once dried, the cutting machinery is used to cut the slabs into smaller blocks. The batch plant is used to load aggregate and mix concrete to be deposited in the casting machinery.

Table 3.2 sets out the results of short-term measurements.

Table 3.2: Summary of Source Noise Measurement Data

Activity	Measurement Location	L_{Aeq} (dB)
Cutting Machine	Internal Reverberant Level	94 dB
Casting	Internal Reverberant Level	79 dB
Batch Plant	At 10 metres	71 dB

It is understood that forklift trucks operate throughout the site, to load and store materials. ENS has previously measured the noise levels associated with FLT loading operations at ≤ **63 dB $L_{Aeq\ (15\ min)}$** at 5 metres.

In order to calculate the contribution of HGV movements at the site, the measured Single Event Level (SEL) of an HGV manoeuvre has been considered. The SEL of a single discrete noise event is the level which, if maintained constant for a period of one second, would contain as much A-weighted sound energy as is contained in the actual noise event. ENS has previously measured the SEL noise levels associated with HGV manoeuvres at up to **84 dB L_{AE}** at 10 metres.

The noise source measurements set out above have been used to calibrate a noise model and determine specific noise levels at each receptor.

4 Noise Assessment

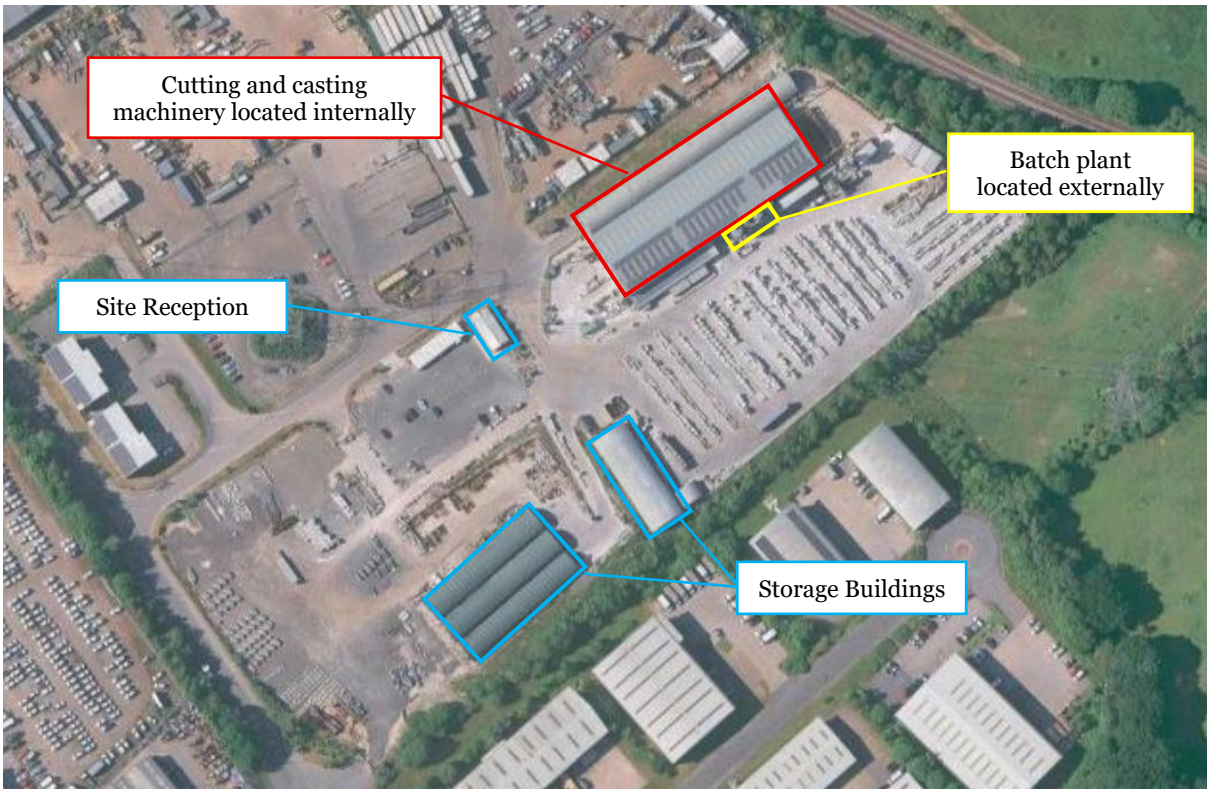
4.1 Noise Associated with Development

The principal noise sources potentially associated with the proposed development are considered to be:

- Internal noise breakout from cutting and casting machinery
- Noise associated with external batch plant
- Noise associated with HGVs at the site
- Noise associated with forklift trucks (FLTs) in the yard

The site layout is illustrated in Figure 4.1.

Figure 4.1: Development Layout



The cutting and casting machinery is located in the building to the north of the site, with only one of the two processes undertaken at a time. As the cutting machine represents the noisiest process, these noise levels are adopted as a worst-case. It is robustly assumed that cutting may be undertaken for the duration of the assessment period.

It is also assumed that external batch plant may operate for the duration of the assessment period.

It is understood that FLTs are used to load and store materials throughout the site. It is understood that circa 15no. HGVs typically access the site per day for deliveries/collections. On this basis, it is robustly assumed that 4no. HGVs may access the site during a 1-hour daytime assessment period, and that 4no. FLTs would be used to load/unload.

4.2 Noise Modelling

In order to assess the propagation of noise from activities at the site to the nearest receptors, noise level predictions have been performed using iNoise acoustic modelling software. This is a software program specifically developed for the prediction and assessment of environmental noise.

The model calculates noise levels on horizontal and vertical grids with a user defined spacing of receiver points. From these levels, calculated at thousands of points, contour lines of constant noise levels are generated and printed as noise maps. All scaling was based on direct import from Google Earth, with 2nd order reflections considered and absorption coefficients based on the iNoise default for brick-built structures.

The following assumptions were used in the model:

- Meteorological conditions: Temp. 20 °C, Relative Humidity 60%
- Foliage/woodland areas not considered to provide any reduction
- Reflections: set to two orders of reflection permitted in the model
- Ground: set to 0.5 (mixed ground)

Source noise measurements (summarised in Table 3.2) have been adopted for use in the noise modelling software.

The sound reduction index (SRI) of the building housing the cutting machinery is taken as 25 dB R_w based on the sound reduction performance of a standard profiled metal façade. The building has roller shutter doors on the south-east, north-east and south-west elevations. The SRI of the roller shutter doors is taken as 18 dB R_w.

Noise from FLT and HGV activities have been modelled as area sources. FLTs are assumed to operate for the duration of the assessment period, with 4no. FLTs and 4no. HGV manoeuvres during the 1-hour assessment period.

Noise level contour maps are presented in Appendix 3. The cumulative resultant noise levels at each receptor are summarised in Table 4.1.

Table 4.1: Summary of Noise Model Outputs

Receptor	Specific Noise Level, $L_{Aeq,1hour}$
NSR 1	37 dB
NSR 2	42 dB

4.3 Impact Assessment

BS 4142 requires that an adjustment can be made for the characteristic features of the sound. Whilst noise from the site may contain particular characteristics in close proximity, the absolute noise levels associated with the development are at least 11 dB below the background noise levels at the NSR1, and 6 dB below the background noise levels at the NSR2.

Inaudibility is a subjective matter, but it is commonly accepted that it is approached when the source noise level is at least 10 dB below the background noise level. As noise associated with the development is likely to be subjectively inaudible at the nearest receptor, no character penalty is warranted at NSR1.

A penalty of +3 dB penalty has been robustly applied at NSR2, to account for potentially distinguishable features of the noise.

On the basis of the above, Table 4.2 contains a weekend daytime (0800 to 1800) BS 4142 assessment at the nearest NSRs for the cumulative resultant noise levels due to site operations.

Table 4.2: BS 4142 Assessment (Proposed Weekend Hours)

Results	NSR1	NSR 2	Comment
Specific sound level	37 dB $L_{Aeq,1hr}$	42 dB $L_{Aeq,1hr}$	Cumulative noise level at receptor
Rating penalty	+0 dB	+3 dB	Penalty applied to account for potentially distinguishable nature of sound. No penalty warranted where character is not perceptible.
Rating level	37 dB $L_{Ar,1hr}$	45 dB $L_{Ar,1hr}$	Rating level for daytime period
Background sound level	48 dB $L_{A90,\ 1hr}$	48 dB $L_{A90,\ 1hr}$	Typical background noise level
Excess of rating over background sound level	-11 dB	-3 dB	Indication of low impact subject to context

Rating levels for the activities at the site are at least 3 dB below weekend daytime background noise levels at the NSRs. In accordance with BS 4142, this is an indication of a low impact, subject to context.

The relevant context of the site is that it lies in a commercial/industrial area, with several other industrial sites surrounding. Naylor Concrete have operated the site for a number of years, including mornings on Saturdays (0800-1300). As such, the proposals to extend weekend operating hours to include 1300-1800 hours are not expected to change the acoustic character of the area.

Furthermore, the attending survey engineer noted that noise from the site was not subjectively audible at the receptors during typical weekday operations. Given that background noise levels were comparable between weekdays and weekends, noise from the site is likely to be largely inaudible during proposed weekend operating hours.

In terms of the NPSE, noise associated with the proposed development is considered to represent the No Observed Adverse Effect Level (NOAEL), whereby the noise may be noticeable and intrusive and may cause some change in behaviour or attitude. As such, noise should be reduced to a minimum where possible.

5 Summary and Conclusions

A noise impact assessment has been undertaken to support a Section 73 application for an extension of operating hours to include weekends at Naylor Concrete, Whaley Road, Barugh Green, S75 1HT.

In order to establish the ambient and background noise levels in the vicinity of the site, a baseline noise survey was undertaken from Friday 13th through to Monday 16th March 2026.

An assessment of the operational noise impact of the site has been undertaken in accordance with BS 4142. The assessment found that the rating levels of noise associated with the site did not exceed the typical background sound level during the proposed weekend operating hours. This indicates that the noise emissions from the proposed operation of the site will have a low impact and is likely to correlate with a NOAEL (No Observed Adverse Effect Level), in accordance with NPSE.

Appendix 1 – Abbreviations and Definitions

Sound Pressure Level (L_p)
The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$L_p = 20 \log_{10}(p/p_o)$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_o = reference sound pressure (20 µPa).

A-weighting
A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$
The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night-time noise levels.

$L_{A10, T}$
The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$
The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$
The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Single Event Level / Sound Exposure Level (SEL or L_{AE})
The energy produced by a discrete noise event averaged over one second, regardless of the event duration. This allows for comparison between different noise events which occur over different lengths of time.

Weighted Sound Reduction Index (R_W)

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies (R_W is used to characterise the insulation of a material or product that has been measured in a laboratory).

Appendix 2 – Noise Monitoring Positions

Appendix 3 – Noise Contour Map for NSRs