clarke saunders acoustics

clarkesaunders.com

PREPARED: Wednesday, 24 May 2023

BRYANSTON ROAD, SOUTHAMPTON

SOUND IMPACT ASSESSMENT

CONTENTS

LIST OF ATTACHMENTS

Project Ref:	AS12977	**Title:**	Bryanston Road, Southampton
Report Ref:	AS12977.230517.R1	**Title:**	Sound Impact Assessment
Client Name:	Doswell Projects		
Project Manager:	Daniel Saunders		
Report Author:	Michael Symmonds		
Clarke Saunders Acoustics Winchester SO22 5BE		This report has been prepared in response to the instructions of our client. It is not intended for and should not be relied upon by any other party or for any other purpose.	

1.0 EXECUTIVE SUMMARY

1.1 Clarke Saunders Acoustics has conducted sound impact assessments of transportation and industrial activity as part of the planning application for a residential development at Bryanston Road, Southampton.

1.2 Vibration levels are sufficiently low such that building isolation should not be required.

1.3 External building fabric specifications have been provided, which will suitably control internal noise maxima and ambient levels, with reference to the desirable standards.

1.4 When considering contextual factors, such as the precedent for residential properties in the area and the relatively modest absolute sound levels in the area, the industrial activity is not anticipated to cause significant adverse impact.

2.0 INTRODUCTION

2.1 Planning permission is sought for a residential development at Bryanston Road, Southampton.

2.2 Clarke Saunders Acoustics (CSA) has been commissioned to conduct assessments of sound and vibration impact on the site. These assessments will consider transportation sources, most notably from train passbys and aircraft flyovers, and sound generated from the Hazel Road Industrial Estate.

2.3 Reference will be made to environmental sound data collected at site, the proposed site and dwellings layout plans, and relevant standard and guidance, namely BS4142:2014+A.1:2019 *Methods for rating and assessing industrial and commercial sound* (BS4142), BS8233:2014 *Guidance on sound insulation and noise reduction for buildings* (BS8233) and the World Health Organisation's *Guidelines for Community Noise (1999)* (WHO).

2.4 A summary of the terminology used throughout this report is provided at Appendix A.

3.0 COMPETENCE

3.1 The sound measurements were taken by Ravee Long and Michael Symmonds, with the assessments and report completed by Michael Symmonds, a Consultant at CSA.

3.2 Ravee Long holds the Institute of Acoustics' Diploma in Acoustics and Noise Control, has a Masters' Degree in Aeronautical Engineering and is an Associate Member of the Institute of Acoustics. Michael Symmonds holds a First Class Masters' Degree in Acoustical Engineering from the Institute of Sound and Vibration Research at the University of Southampton, is a Corporate Member of the Institute of Acoustics and has more than five years' experience in the consultancy field.

3.3 The report adheres with the principles required by the Institute of Acoustics in their Code of Conduct, and the work is within the author's own area of knowledge and expertise. Where opinions have been expressed these represent true and complete professional opinions on the matters to which they refer.

3.4 CSA is a full member of the Association of Noise Consultants (ANC).

4.0 SITE DESCRIPTION

4.1 The site is located in a primarily residential area, surrounded by residential properties to the north-east, south-east and south-west. The site lies approximately beneath the flight path of Southampton Airport.

4.2 To the north-west lies a National Rail line, travelling between Bitterne and Woolston Station. Beyond the National Rail line is the Hazel Road Industrial Estate, comprising many industrial units, most notable of which are determined to be Solent Tyre Services Ltd, Woolston Auto Engineering, Hullypods and A1 Powder Coatings.

4.3 The proposals consist of eight terraced houses within a total of three blocks. Private fenced gardens will face north-west.

5.0 METHODOLOGY

5.1 LOCAL AUTHORITY LIAISON

5.1.1 CSA has liaised with Elaine Jeffery, Principal Environmental Health Officer at Southampton City Council.

5.1.2 CSA confirmed that two attended site survey visits had been conducted, during which measurements were made of sound levels from the primary transportation sources in the area (trains and planes). This allowed assessment against the desirable targets provided in BS8233 and the WHO Guidelines.

5.1.3 Vibration levels were also measured during train passbys, allowing comparison against the targets within BS 6472-1:2008 *Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting* (BS6472).

5.1.4 Audio recordings and measurements of the industrial activity were made, allowing assessment to be made following the procedures within BS4142, using the reference methods to calculate character corrections.

5.1.5 The following sections confirm the targets within the relevant standards.

5.2 BS8233

5.2.1 BS8233 confirms desirable internal noise levels to be achieved within dwellings, which are provided in the following table. These targets are provided for steady anonymous noise sources, such as that from road traffic.

ACTIVITY	LOCATION	07:00 TO 23:00	23:00 TO 07:00
Resting	Living Room	35dB $L_{Aeq,16hr}$	-
Dining	Dining Room	40dB $L_{Aeq,16hr}$	-
Sleeping (daytime resting)	Bedroom	35dB $L_{Aeq,16hr}$	30dB $L_{Aeq,8hr}$

Table 5.1 – *BS8233 desirable internal noise targets*

5.2.2 The World Health Organisation's Guidelines for Community Noise comments on night-time noise maxima, resulting in a typically adopted target of L_{AFmax} 45dB not being exceeded in bedrooms more than 10-15 times per night.

5.3 BS6472

5.3.1 Vibration impact can be considered in terms of perceptibility and vibration dose response (VDV).

5.3.2 The typical threshold of perception, which should not be exceeded within dwellings, is $0.015m/s^2$.

5.3.3 BS6472 states that a VDV in the range $0.2\text{-}0.4m/s^{1.75}$ or $0.1\text{-}0.2m/s^{1.75}$ might result in a low probability of adverse comment during daytime and night-time, respectively.

5.4 BS4142

5.4.1 Sound impact from industrial and commercial operations should be assessed following the methodology provided within BS4142.

5.4.2 Appendix B provides a summary of the BS4142 assessment methodology.

6.0 SURVEY

6.1 PROCEDURE AND EQUIPMENT

Sound Survey

6.1.1 A survey of the existing sound levels was undertaken at the positions shown in the site plan between 12:15 hours and 13:15 on Wednesday 10th May 2023, and between 07:45 hours and 08:45 hours on Tuesday 16th May 2023.

6.1.2 The sound level meter was set to record uncompressed audio files and 100ms sound pressure level logs, in addition to measurements of consecutive 5 – minute L_{Aeq}, L_{Amax}, L_{A90} and L_{A10} sound pressure levels.

6.1.3 The following equipment was used during the course of the survey:

- NTi sound level meter type XL2-TA;
- Rion sound level calibrator type NC74.

6.1.4 The calibration of the sound level meter was verified before and after use. No significant calibration drift was detected. All CSA equipment has current traceable laboratory calibration. Certification is available upon request.

6.1.5 The weather during the surveys was dry with light winds, which are appropriate conditions for the measurement of environmental sound.

6.1.6 Environmental sound survey measurements were made following procedures in BS4142 and BS 7445:1991 (ISO1996-2:1987) *Description and measurement of environmental noise Part 2- Acquisition of data pertinent to land use*.

Vibration Survey

6.1.7 A vibration monitor was used at Monitoring Location 1, recording vibration levels caused by train movements on 10th May 2023.

6.1.8 The following equipment was used during the course of the survey:

- Svantek four channel sound and vibration analyser type 958, with model SV84 triaxial accelerometer.

6.1.9 The accelerometer was set to record vibration levels as acceleration in three perpendicular axes, from which equivalent Vibration Dose Values (eVDV) were determined for daytime and night-time periods following the procedures described in BS6472.

6.1.10 The measurements were made following procedures in BS6472 and the guidance set out in the ANC Measurement and Assessment of Groundborne Noise and Vibration.

6.2 RESULTS

Noise Survey

6.2.1 Figure AS12977/TH1 shows the time history trace of the L_{AFmax} values across a survey period, with the train passbys indicated. Vibration levels are also shown on the chart. Further measurements at site shows that train passby noise maxima could reach L_{AFmax} 75dB.

6.2.2 Aircraft flyovers were generally at a similar level, however, the loudest flyover was measured at L_{AFmax} 79dB.

6.2.3 Detailed measurements of the industrial activity sound were recorded during the survey visits. The Ambient, Residual, Specific and Background Sound Levels are stated in Table 6.1.

PARAMETER	LEVEL
Ambient Sound	$L_{Aeq,T}$ 52-54dB
Residual Sound	$L_{Aeq,T}$ 50dB
Specific Sound (Ambient minus Residual)	$L_{Aeq,T}$ 49-52dB
Background Sound	L_{A90} 46-49dB

Table 6.1 – *Industrial sound level parameters*

6.2.4 The specific sound sources notable during the surveys were beeping reversing alarms from forklifts and heavy goods vehicles, metal banging sound from the other side of the River Itchen, air tool use from Hullypods, portable generator sound from A1 Powder Coatings, and general vehicle movements.

Vibration Survey

6.2.5 The W_b weighted peak acceleration levels during train passbys were measured to be in the range 0.01 – 0.015m/s^2, as shown in AS12977/TH1. This range is generally below the value commonly adopted to represent the threshold of perception.

6.2.6 On the basis of the measured acceleration levels, the number of train passbys during a typical daytime and night-time period and the typical length of a passby, VDV values have been calculated.

6.2.7 The VDVs are calculated to be 0.10m/s$^{1.75}$ during the day and 0.06m/s$^{1.75}$ during the night, both of which indicate a low probability of adverse comment. Building isolation should not, therefore, be required.

7.0 TRANSPORTATION NOISE SOURCE ASSESSMENT

7.1 As the site is significantly sheltered from road traffic sources, the acoustic requirement for the external building fabric is determined by the train passby and aircraft flyover noise maxima.

7.2 The typical highest noise maxima during a train passby of L_{AFmax} 75dB has been used to calculate the external building fabric sound reduction requirements.

7.3 On the basis of the non-glazed external building fabric elements achieving a sound reduction of at least R_w 45dB, which is achievable with traditional constructions, the glazing and trickle ventilator requirements are confirmed in Table 7.1.

SCENARIO	GLAZING PERFORMANCE	TRICKLE VENTILATOR PERFORMANCE
Façade with line of sight to train line	R_w ≥32dB	$D_{n,e,w}$ ≥35dB
Façade with no line of sight to train line	R_w ≥30dB	$D_{n,e,w}$ ≥30dB

Table 7.1 – *Summary of initial impact numerical estimate*

7.4 These glazing specifications should result in the desirable internal noise levels being achieved, as stated in Section 5.2.

8.0 BS4142 ASSESSMENT

8.1 INITIAL IMPACT ESTIMATE

8.1.1 The most notable characteristics of the industrial sound were the beeping reversing alarms and metal banging. The reference methods described in BS4142 were used to quantify the character corrections for tonality and impulsivity. This resulted in character corrections of +6dB for tonality and +8dB for impulsivity.

8.1.2 Table 8.1 provides a summary of the initial impact numerical estimate.

PARAMETER	LEVEL
Specific Sound Level	$L_{Aeq,T}$ 49-52dB
Tonality Correction	+6dB
Impulsivity Correction	+8dB
Rating Level	$L_{Ar,Tr}$ 63-66dB
Background Sound Level	L_{A90} 46-49dB
Initial Impact Estimate Level	+14dB to +20dB

Table 8.1 – *Summary of initial impact numerical estimate*

8.1.3 The initial impact estimate level indicates a likelihood of significant adverse impact, dependent on context.

8.2 CONTEXT, UNCERTAINTY AND DISCUSSION

8.2.1 The contextual factors that require consideration include the absolute level of sound, duration and regularity of sound, the precedence of residential properties in the area, and proposed design principles that may secure reasonable acoustic conditions.

8.2.2 The absolute level of sound, $L_{Aeq,T}$ 49-52dB, is relatively modest, such that the glazing and trickle ventilator specifications aimed at controlling transportation noise sources will reduce the overall level well below the targets stated in Table 5.1. The internal sound levels within dwellings will, therefore, benefit from substantial protection afforded by the external building fabric elements.

8.2.3 The private gardens of the proposed dwellings will benefit from close boarded timber fences, which may reduce the ambient sound levels in some parts of the garden through line of sight screening.

8.2.4 The industrial units associated with the notable sound sources are understood to typically operate no later than 17:30 hours, therefore allowing the residents to benefit from relatively quiet conditions in the more sensitive evening and night-time periods. Many of the units are also closed during weekend periods, providing further respite for the nearby residents.

8.2.5 There are many residential dwellings in the vicinity of the site that are already exposed to the industrial sound, the industrial sound exposure of the new dwellings is entirely consistent with other dwellings in the vicinity of Bryanston Road and Ashburnham Close.

8.2.6 Industrial sound is not limited to the Bryanston Road area. Some of the industrial sound, in particular the metal banging sounds, originate from the other side of the River Itchen, therefore exposing the wider west Peartree area to industrial sound.

8.2.7 As per the requirements of BS4142, the uncertainty in the assessment is considered and reported. This is not an indication of error, but an acknowledgement of possible variability of the factors contributing to this assessment.

8.2.8 The attended sound measurements of the industrial activity sound at the receptor positions, conducted over two separate periods at different times of the day, acknowledges the variability in sound levels.

8.2.9 The reference methods have been used to calculate the character corrections, which provide more verifiable values than the alternative subjective or one-third octave methods.

9.0 CONCLUSIONS

9.1 Clarke Saunders Acoustics has conducted sound impact assessments of transportation and industrial activity as part of the planning application for a residential development at Bryanston Road, Southampton.

9.2 Reference has been made to environmental sound data collected at site, the proposed site and dwellings layout plans, and relevant standard and guidance, namely BS4142:2014+A.1:2019 *Methods for rating and assessing industrial and commercial sound* (BS4142), BS8233:2014 *Guidance on sound insulation and noise reduction for buildings* (BS8233) and The World Health Organisation's Guidelines for Community Noise (1999).

9.3 Vibration levels are sufficiently low such that building isolation should not be required.

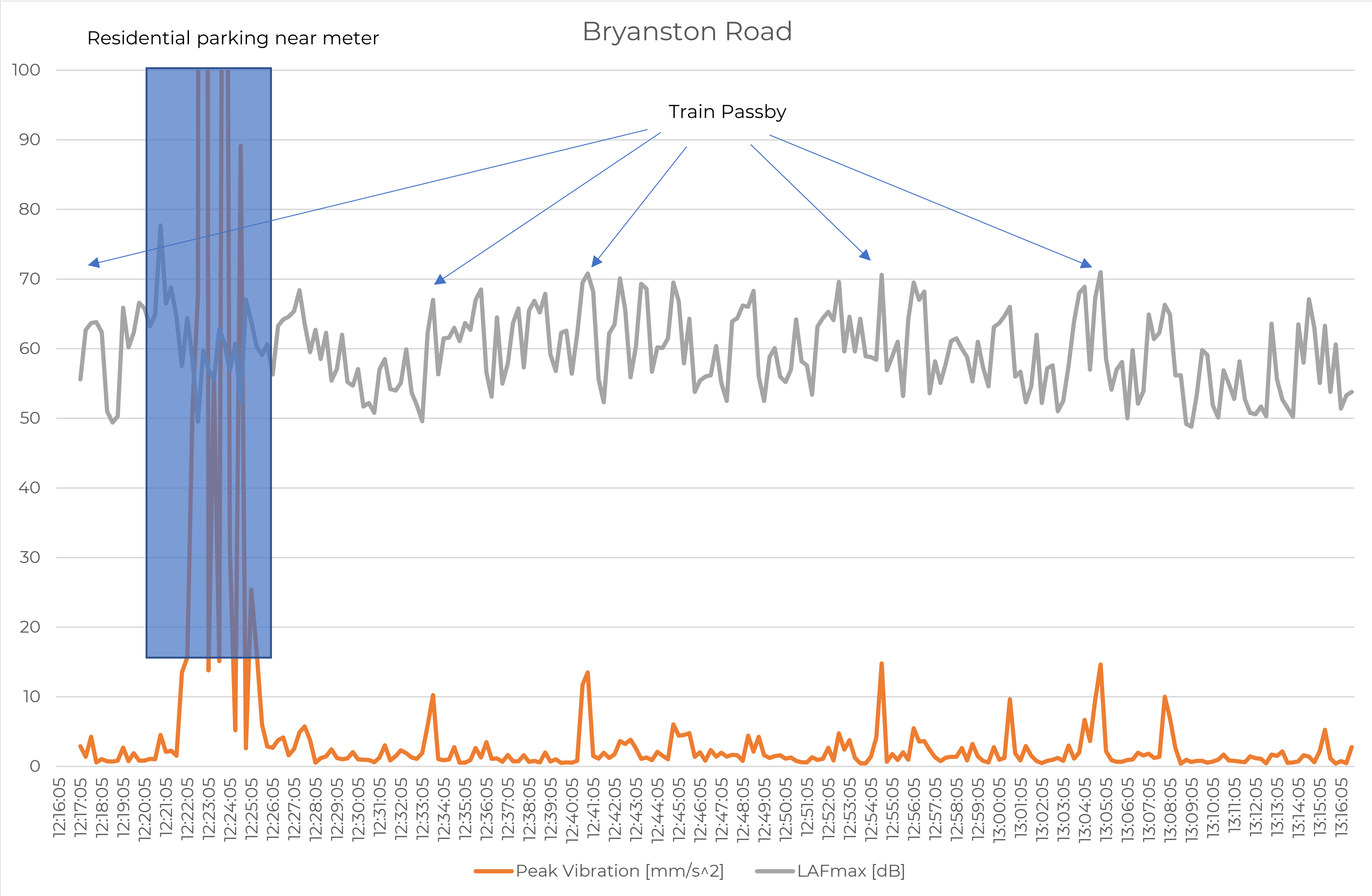
9.4 External building fabric specifications have been provided, which will suitably control internal noise maxima and ambient levels, with reference to the desirable standards.

9.5 When considering contextual factors, such as the precedent for residential properties in the area and the relatively modest absolute sound levels in the area, the industrial activity is not anticipated to cause significant adverse impact.

M Symmonds

Michael Symmonds MIOA
CLARKE SAUNDERS ACOUSTICS


N
Monitoring Location 1
Monitoring Location 2
Google
Imagery ©2023 Google, Imagery ©2023 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, The GeoInformation Group, Map data ©2023


Bryanston Road
Residential parking near meter
Train Passby
100
90
80
70
60
50
40
30
20
10
0
12:16:05
12:17:05
12:18:05
12:19:05
12:20:05
12:21:05
12:22:05
12:23:05
12:24:05
12:25:05
12:26:05
12:27:05
12:28:05
12:29:05
12:30:05
12:31:05
12:32:05
12:33:05
12:34:05
12:35:05
12:36:05
12:37:05
12:38:05
12:39:05
12:40:05
12:41:05
12:42:05
12:43:05
12:44:05
12:45:05
12:46:05
12:47:05
12:48:05
12:49:05
12:50:05
12:51:05
12:52:05
12:53:05
12:54:05
12:55:05
12:56:05
12:57:05
12:58:05
12:59:05
13:00:05
13:01:05
13:02:05
13:03:05
13:04:05
13:05:05
13:06:05
13:07:05
13:08:05
13:09:05
13:10:05
13:11:05
13:12:05
13:13:05
13:14:05
13:15:05
13:16:05
Peak Vibration [mm/s^2]
LAFmax [dB]

Acoustic Terminology

The human impact of sounds is dependent upon many complex interrelated factors such as 'loudness', its frequency (or pitch) and variation in level. In order to have some objective measure of the annoyance, scales have been derived to allow for these subjective factors.

Sound	Vibrations propagating through a medium (air, water, etc.) that are detectable by the auditory system.
Noise	Sound that is unwanted by or disturbing to the perceiver.
Frequency	The rate per second of vibration constituting a wave, measured in Hertz (Hz), where 1Hz = 1 vibration cycle per second. The human hearing can generally detect sound having frequencies in the range 20Hz to 20kHz. Frequency corresponds to the perception of 'pitch', with low frequencies producing low 'notes' and higher frequencies producing high 'notes'.
dB(A):	Human hearing is more susceptible to mid-frequency sounds than those at high and low frequencies. To take account of this in measurements and predictions, the 'A' weighting scale is used so that the level of sound corresponds roughly to the level as it is typically discerned by humans. The measured or calculated 'A' weighted sound level is designated as dB(A) or L_A.
L_{eq} :	A notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the actual, fluctuating sound measured over that period (e.g. 8 hour, 1 hour, etc). The concept of L_{eq} (equivalent continuous sound level) has primarily been used in assessing noise from industry, although its use is becoming more widespread in defining many other types of sounds, such as from amplified music and environmental sources such as aircraft and construction. Because L_{eq} is effectively a summation of a number of events, it does not in itself limit the magnitude of any individual event, and this is frequently used in conjunction with an absolute sound limit.
L_{10} & L_{90} :	Statistical L_n indices are used to describe the level and the degree of fluctuation of non-steady sound. The term refers to the level exceeded for n% of the time. Hence, L_{10} is the level exceeded for 10% of the time and as such can be regarded as a typical maximum level. Similarly, L_{90} is the typical minimum level and is often used to describe background noise. It is common practice to use the L_{10} index to describe noise from traffic as, being a high average, it takes into account the increased annoyance that results from the non-steady nature of traffic flow.
L_{max} :	The maximum sound pressure level recorded over a given period. L_{max} is sometimes used in assessing environmental noise, where occasional loud events occur which might not be adequately represented by a time-averaged L_{eq} value.
R	*Sound Reduction Index.* Effectively the *Level Difference* of a building element when measured in an accredited laboratory test suite in accordance with the procedures laid down in BS EN ISO 10140-2:2010 and corrected for its size and the reverberant characteristics of the receive room.

D	The sound insulation performance of a construction is described in terms of the difference in sound level on either side of the construction in the presence of a sound source on one side and the reverberant characteristics of the adjoining 'receive' space. *D* is the arithmetic *Level Difference* in decibels between the source and receive sound levels when filtered into frequency bands.
$D_{n,e}$	Normalised sound insulation of small building elements of fixed dimensions, such as vents, measured in an accredited laboratory test suite in accordance with the procedures laid down in BS EN ISO 10140-2:2010.
R_w $D_{n,e,w}$	Value of parameter, determined as above, but weighted in accordance with the procedures laid down in BS EN ISO 717-1 to provide a single-figure value.

Octave Band Frequencies

In order to determine the way in which the energy of sound is distributed across the frequency range, the International Standards Organisation has agreed on "preferred" bands of frequency for sound measurement and analysis. The widest and most commonly used band for frequency measurement and analysis is the Octave Band.

In these bands, the upper frequency limit is twice the lower frequency limit, with the band being described by its "centre frequency" which is the average (geometric mean) of the upper and lower limits, e.g. 250 Hz octave band extends from 176 Hz to 353 Hz. The most commonly used octave bands are:

Octave Band Centre Frequency Hz	63	125	250	500	1000	2000	4000	8000

Human Perception of Broadband Noise

Because of the logarithmic nature of the decibel scale, it should be borne in mind that sound levels in dB(A) do not have a simple linear relationship. For example, 100dB(A) sound level is not twice as loud as 50dB(A). It has been found experimentally that changes in the average level of fluctuating sound, such as from traffic, need to be of the order of 3dB before becoming definitely perceptible to the human ear. Data from other experiments have indicated that a change in sound level of 10dB is perceived by the average listener as a doubling or halving of loudness. Using this information, a guide to the subjective interpretation of changes in environmental sound level can be given.

INTERPRETATION

Change in Sound Level dB	Subjective Impression	Human Response
0 to 2	Imperceptible change in loudness	Marginal
3 to 5	Perceptible change in loudness	Noticeable
6 to 10	Up to a doubling or halving of loudness	Significant
11 to 15	More than a doubling or halving of loudness	Substantial
16 to 20	Up to a quadrupling or quartering of loudness	Substantial
21 or more	More than a quadrupling or quartering of loudness	Very Substantial

Earth Bunds and Barriers - Effective Screen Height

When considering the reduction in sound level of a source provided by a barrier, it is necessary to establish the "effective screen height". For example if a tall barrier exists between a sound source and a listener, with the barrier close to the listener, the listener will perceive the sound as being louder if he climbs up a ladder (and is closer to the top of the barrier) than if he were standing at ground level. Equally if he sat on the ground the sound would seem quieter than if he were standing. This is explained by the fact that the "effective screen height" is changing with the three cases above. In general, the greater the effective screen height, the greater the perceived reduction in sound level.

Similarly, the attenuation provided by a barrier will be greater where it is aligned close to either the source or the listener than where the barrier is midway between the two.

APPENDIX B

BS4142 METHODOLOGY

BS4142 is designed to allow contextual assessment of impact from commercial, or industrial sound on sensitive receptors. Examples covered by the Standard include:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical plant and equipment.
- Sound from the loading and unloading of goods and materials at industrial and/or commercial premises, and
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes.

In brief, the assessment procedure involves establishing sound levels from the items or processes of interest, (the specific sound source(s)), corrected for any acoustic features to derive the Rating Level, ($L_{Ar,Tr}$), at the relevant assessment position(s). The Rating Level is compared against the existing Background Sound Level, ($L_{A90,T}$), to provide an initial estimate of impact. The Standard offers the following guidance with regard to the significance of estimated impact:

a) Typically, the greater this difference, the greater the magnitude of the impact;

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

c) A difference of around +5dB could be an indication of an adverse impact, depending on the context;

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

Where relevant, the initial estimate should then be modified by accounting for contextual aspects of the operation of the specific sound source and / or the context of the character of the area.

Other Assessment Parameters and Guidance on Character Corrections

The Specific Sound Level (L_s) is expressed in terms of an L_{Aeq} for a reference time interval, (T_r) of one-hour during the daytime (07:00 – 23:00 hours) and a fifteen-minute period during the night-time (23:00 – 07:00 hours). The Rating Level is also expressed in terms of the reference time interval, T_r.

The Specific Sound Level can be determined by various means, which can include prediction based on manufacturer's data and accompanying propagation calculations to the assessment position(s). This method could be used, for instance, where the specific sound source is not yet in-situ, or is in-situ but not yet operational.

Where the specific sound source is already operational and in-situ, measurements of the sound climate resulting from both the specific sound source and all other contributing sources, (knows as the Ambient Sound Level, L_a = $L_{Aeq,T}$) should be measured over a representative time period, ideally at the assessment position(s).

Depending on the relative contribution of other sources not related to the specific sound, (known as the residual sound), the Specific Sound Level can be derived by logarithmically subtracting the Residual Sound Level, L_r = $L_{Aeq,T}$, from the Ambient Sound Level.

With justification, representative proxy locations can be used for the measurement of the ambient and/or residual sound climate. Where these measurement locations are not fully representative of the assessment position(s), measurement can be supplemented with calculation.

The Background Sound Level should ideally also be measured at the assessment position(s) but can be measured at representative proxy locations where suitable reasons can be provided. The Background Sound Level should be measured over a period which is suitable to characterise the background sound climate during the period of interest and should normally be at least 15 minutes.

When deriving the Rating Level from the Specific Sound Level, consideration is given to the character of the sound. The Standard provides several methods for deriving appropriate character corrections, offering the following advice for subjective assessment:

Tonality

For sound ranging from not tonal to prominently tonal, the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be allocated as a penalty of 2 dB for a tone which is just perceptible at the sound receptor, 4 dB where it is clearly perceptible and 6 dB where it is highly perceptible.

Impulsivity

A correction of up to +9dB can be applied for sound that is highly impulsive considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be allocated as a penalty of 3dB for impulsivity which is just perceptible at the receiver, 6dB where it is clearly perceptible and 9dB where it is highly perceptible.

Other sound characteristics

Where the specific sound contains characteristics that are neither tonal nor impulsive, but are otherwise startling, disturbing or incongruous with the residual acoustic environment, a penalty of +3dB can be applied.

Intermittency

When the specific sound has identifiable on/off conditions, if the intermittency is readily distinctive against the residual acoustic environment, a penalty of +3dB can be applied.

NOISE REPORT AUDIT SHEET

This initiative was developed by representatives of the Hampshire and IOW Environmental Control Advisory Committee (ECAC) and Institute of Acoustics Southern Branch.
As part of this pilot initiative, Clarke Saunders is including this audit sheet for all planning related acoustic reports.

Client Brief

Brief Description	Residential development at Bryanston Road
Design Input	Assess sound from National Rail line, aircraft flyovers, Hazel Road Industrial Estate and road traffic.

Liaison with LA

Liaison with LA (Name/Date)	*Elaine Jeffery (Principal EHO)*
Principles Agreed	*Attended measurements of the primary sound sources (trains, planes, industrial estate activity).* *Refer to BS8233, BS6472 and BS4142 for the relevant assessments.*

Check List	***Page No(s)***	***Compliance***		
		Y	**N**	**N/A**
Full site description/map provided	Section 3, figure SP1	Y		
Site history provided	Section 3	Y		
Current and potential future acoustic environment identified	Section 5-7	Y		
Identification of relevant legislative framework	Section 4	Y		
Conceptual model fully justified	Section 6-7	Y		
Inclusion of reporting elements of BS4142:2014 (Para 12 a to j)	Section 5, 7	Y		
Monitoring data fully representative	Section 5	Y		
Raw data presented	Figure AS12977/TH1	Y		
ADS included (where ProPG relevant)				N/A
Calculations and assumptions fully presented and justified	Section 5-7	Y		
Uncertainty assessment provided	Section 7.3	Y		
Clear recommendations and conclusions	Section 8	Y		
Executive summary included	Section 1	Y		

Professional Statement *- This report has been prepared independent of influence by the person(s) or instructing party, such that the technical content can be relied upon without knowingly containing altered, manipulated, fabricated or misrepresented data and it has been interpreted using reasonable care, professional knowledge and skill. The report adheres with the principles required by the Institute of Acoustics in their Code of Conduct, and the work is within the author's (including secondary author if relevant) own area of knowledge and expertise. Where opinions have been expressed these represent true and complete professional opinions on the matters to which they refer.*

Signed	**Positon**	**Dated**
Michael Symmonds MIOA	Consultant	24/05/2023

v1	*First Issue - pilot*	*24/10/2018*
v2	*Second issue - pilot*	*19/12/2018*