

Noise Assessment

The Lion – Luddesdown Road



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Non-Technical Summary

What is Proposed?

Proposed extension at The Lion pub garden and rerouting of the Silverhand Estate winery access road at the Luddesdown site in Kent

What is the Problem?

The site is located near residential areas and the proposed changes could result in additional operational noise from the development which could have an effect on the local environment.

What is the Result?

The assessment has shown that whilst a slight increase in patron noise due to the pub garden extension can be expected at the worst-affected nearby dwellings, the increase can be classified as 'minor' in the short term and 'negligible' in the long term.

With respect to operational plant noise, BS 4142 calculations show that commercial activity could exceed the prevailing background sound conditions. However, as the exceedance is objectively low and would normally only occur sporadically, the projected plant noise increase would most likely be acceptable, especially when it is considered that the affected properties are under the ownership of the Applicant and, as understood, only used by their staff.

The proposed changes are not expected to have any direct noise effects on any other noise-sensitive receptors in the area.

Report Record

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Client	MDCV UK
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2.0	22/07/25	SB	First Issue for Client Comment
2.1	30/07/25	FHS	Minor changes
2.2	13/03/26	FHS	Updated access road and loading area omission



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1.0 Introduction

- 1.1 Redevelopment and extension works are proposed at the existing The Lion pub/restaurant and the adjacent Silverhand Estate winery in the rural Luddesdown village near Gravesend, Kent. The proposals involve the extension of the pub garden and rerouting of the commercial access road and loading area to the Silverhand Estate winery.
- 1.2 The proposed changes could result in noise changes in the area which could have an effect on the local environment. To determine these potential changes in noise and whether they could have detrimental effect, a noise assessment has been undertaken. This report presents the findings of the noise assessment.

What is a Noise Assessment?

- 1.3 A Noise Assessment will determine if and to what extent existing or future noise sources could affect noise-sensitive receptors, and importantly, if those noise sources could have an adverse impact. If the Noise Assessment finds that the level of risk or impact is unacceptable, mitigation measures will need to be applied to the development.
- 1.4 The Noise Assessment will consider the prevailing sound environment to determine potential noise sources including traffic, aircraft or other noise generating activities, such as mechanical plant, generators etc. The report will provide an impact assessment and give actionable recommendations. Recommendations may include solutions involving changes to design, layout and construction methods, so that the impacts from noise can be reduced to acceptable levels. Often these mitigation measures can be incorporated into standard construction practices. Find out more about how we undertake Noise Assessments including FAQ [here](#).
- 1.5 Understanding and reducing the impacts ensures that you have a safe and compliant site. When dealing with planning, the National Planning Policy Framework (NPPF) and associated policies require an appropriate noise assessment at the initial planning stage, whilst the ProPG: Planning & Noise Professional Practice Guidance on Planning & Noise New Residential Development May 2017 requires delivery of sustainable development by promoting good health and wellbeing through the effective management of noise.



The Subject Site

Table 1 Site Details

Address	The Lion, Luddesdown Road, Gravesend DA13 0XE
Eastings, Northings	567227, 166684
Local Planning Authority	Gravesham Borough Council

- 1.6 The site comprises The Lion public house/restaurant and Silverhand Estate winery based at Court and Brookers Farm located in Luddesdown, a rural village near Gravesend, Kent. The north/eastern half of the site comprises a car park, and a large pub garden is situated towards the south of the property. The pub is bordered by Luddesdown Road to its west and The Silverhand Estate winery/shop to the south/east.
- 1.7 Towards the north of The Lion are two residential properties, namely Brookers Farm and Darnley Cottage. There are two further properties, no. 88 and 89 Luddesdown Road, directly south of the pub garden which are also of a residential nature. However, it is understood that both these properties are part of the Silverhand Estate, which is owned by the Applicant, and also includes The Lion. Further afield to the south, there are a couple more dwellings, i.e. Cutteridge Cottage and The Old Rectory.
- 1.8 The site location is shown in Figure 1 overleaf.

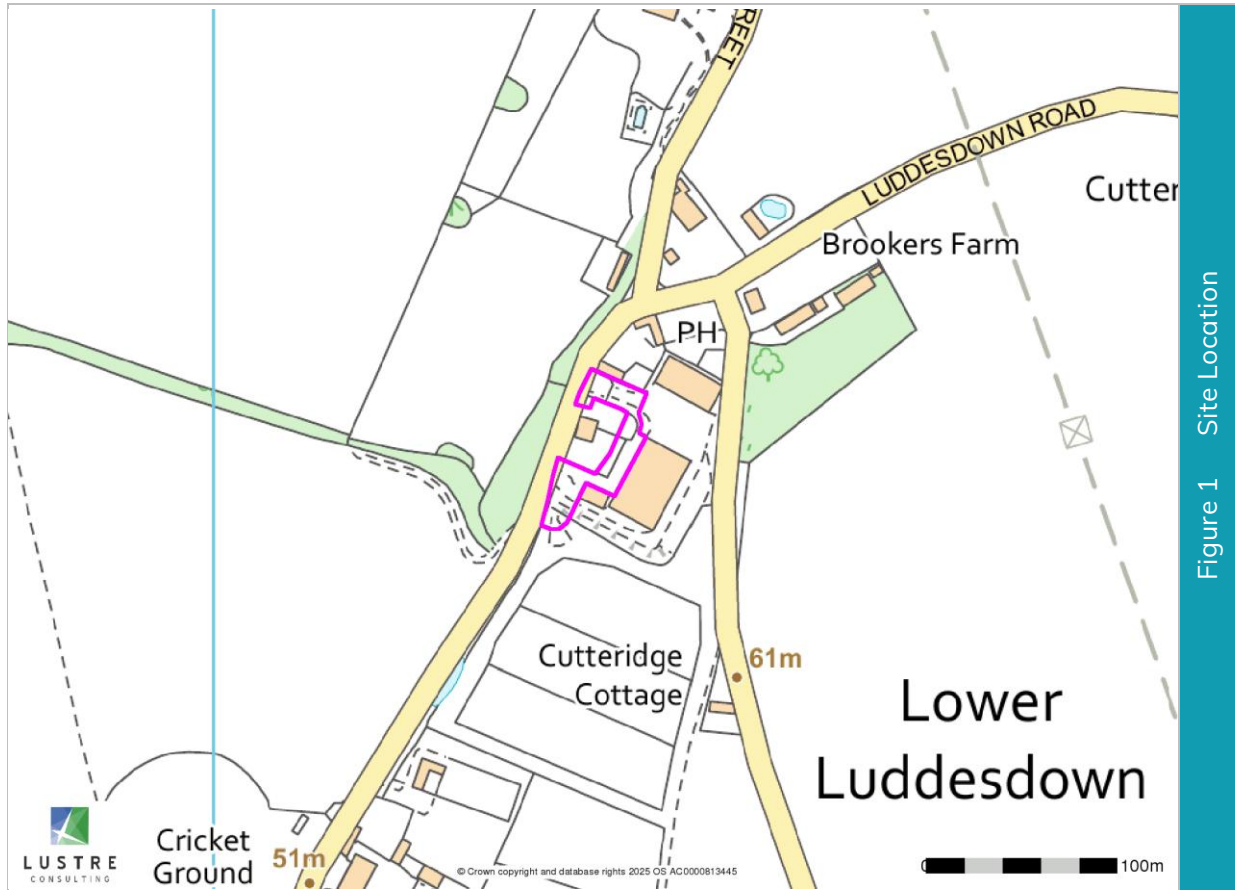


Figure 1 Site Location

The Proposed Development

- 1.9 It is understood that the site is proposed to be redeveloped to provide an extended pub garden for The Lion and altered access ways to the pub and adjacent commercial yard (Court and Brookers Farm), as illustrated in Figure 2 below.
- 1.10 Proposed development plans involve the relocation of the commercial yard access point (to Court and Brookers Farm) on Luddesdown Road from the north-west of the site to the south-west. The northern-most portion of the site will be converted to soft landscaping to form an extension of the existing pub garden, which may include a children's play area.
- 1.11 A new walkway will connect the overflow car park, beyond the southern boundary of the site, to the pub garden in the north of the site. The new walkway will be 1.8m wide and comprise a resin bound gravel pathway with vegetated soft verges on either side. A wide concrete track will run adjacent to the new walkway to provide commercial access to Court and Brookers Farm. The south-western access point will therefore become the main access



point for the overflow car park (beyond south of site) and Court and Brookers Farm adjacent to the east of the site.

1.12 The proposed development plan is shown in the Figure 2 below.

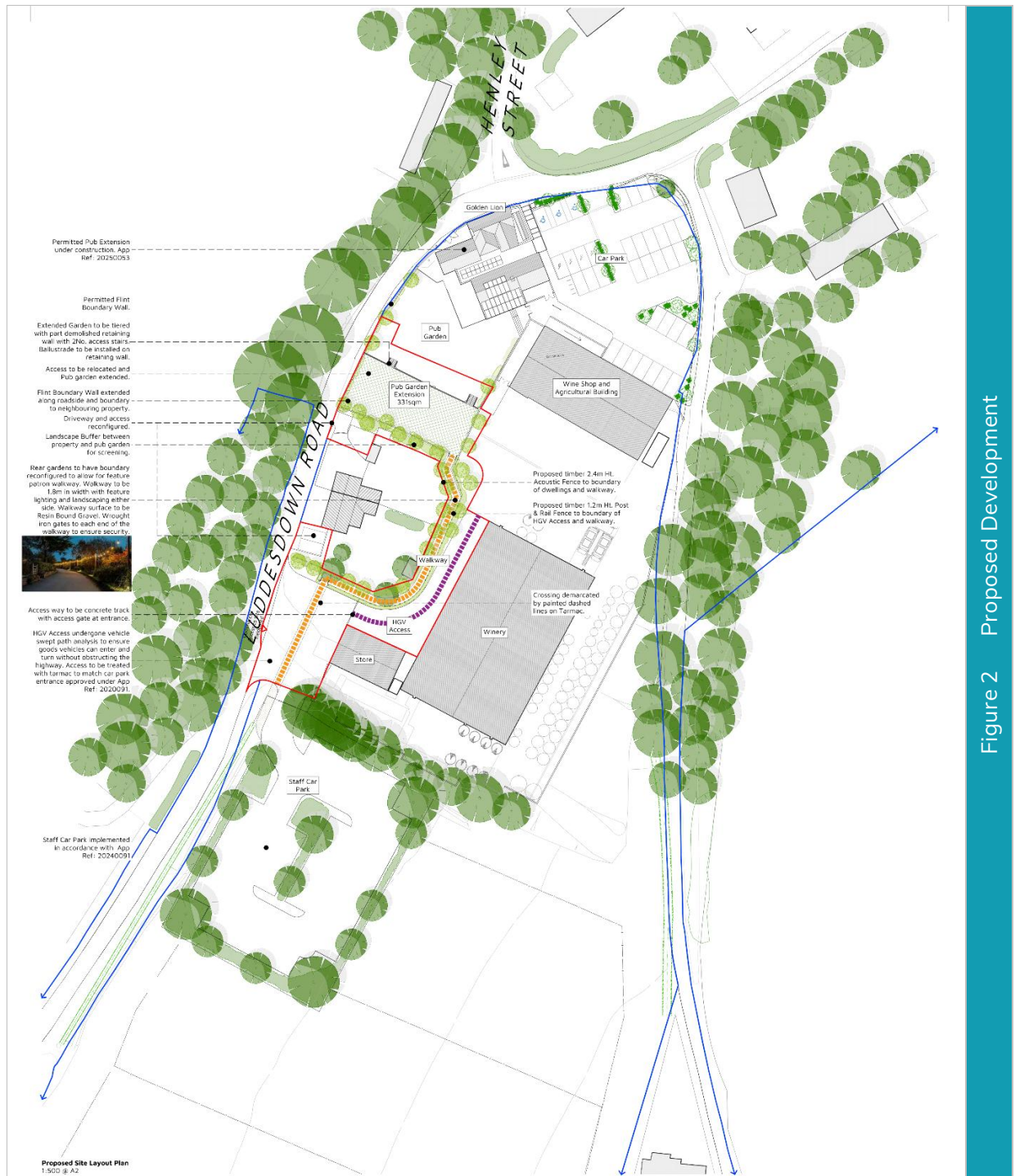


Figure 2 Proposed Development



The Objectives

- 1.13 The scope of works adopted in this Noise Assessment will address the following potential issues:
- ▶ Potential for noise from the rerouted access road next to existing loading area.
 - ▶ Potential for noise from the proposed extension of the pub garden.
- 1.14 The objective of this report is therefore to determine the noise environment and to provide a general indication of the likely impact on noise levels at the development site and within the surrounding areas.

Report Structure, Limitations & Changes

- 1.15 The report structure generally follows the pollution linkage approach described above. Chapter 2 of the report sets out the assessment methodology. Chapter 3 discusses the baseline noise conditions, with the potential for future operational noise and discussion on potential effects presented in Chapter 4. Report summary and conclusions are set out in Chapter 5.
- 1.16 There are a lot of technical terms in this report and definitions are provided in Appendix A. Appendix B details some of the relevant policy/guidance that this assessment is based on as well as acoustic criteria/thresholds. Extracts of the noise survey data and analysis are provided in Appendix C.
- 1.17 This assessment has been undertaken in accordance with our Terms & Conditions. Full details on limitations and reliance are provided in those Terms. Third party information which has been reviewed and used to inform the assessments presented herein, including public records held by various regulatory authorities and environmental database data has been assumed to be true and accurate.
- 1.18 This assessment has been carried out to determine the potential risks posed to nearby noise-sensitive receptors, based on the current development. Should revisions in the development proposals result in a change in any assessment parameters detailed in this report, a re-assessment of the risk should be carried out.



2.0 Assessment Methodology

Introduction

- 2.1 This chapter lists the target noise sources identified from a review of Google Earth / Street View, from any client or regulator information and from observations made during deployment of monitoring equipment / site visits. In addition, this section details the methodology for the noise monitoring equipment deployment and survey standards.

Acoustic Criteria

- 2.2 Reference has been made to a number of design requirements/guidance to determine the acoustic design criteria for the proposed development. In summary, these include:
- ▶ Local Planning Authority (Gravesham Borough Council) requirements
 - ▶ BS 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings'
 - ▶ BS 4142:2014+A1(2019) - Methods for rating and assessing industrial and commercial sound
 - ▶ IEMA Guidelines for Environmental Noise Impact Assessment
- 2.3 The above are discussed in more detail below.

Local Policy

- 2.4 Gravesham Borough Council's Supplementary Planning Document DESIGN FOR GRAVESHAM Design Code (May 2024) provides high level requirements with respect to residential amenity:

Private amenity space must be provided for all new flats and maisonettes subject to taking into consideration outlook, orientation, micro-climatic conditions (including noise, air quality and wind).

- 2.5 The Supplementary Planning Document does not include reference to specific noise guidance or standards. However, from previous project experience in the area, Gravesham Borough Council would typically look for noise assessments for new/altered commercial developments to be undertaken with due regard to British Standards 8233:2014 and 4142:2014.



BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings

- 2.6 BS 8233 'Guidance on sound insulation and noise reduction for buildings' provides guidance on indoor ambient noise levels for various situations.
- 2.7 The relevant guideline limits for dwellings are shown in Table 2.

Table 2 BS 8233 Indoor Ambient Noise Levels for Dwellings			
Activity	Location	Daytime (07:00 – 23:00)	Night-time (23:00 – 07:00)
Resting	Living room	35 dB $L_{Aeq,16h}$	—
Dining	Dining room/area	40 dB $L_{Aeq,16h}$	—
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16h}$	30 dB $L_{Aeq,8h}$

- 2.8 It is important to note that the above guideline noise level limits are applicable to 'anonymous' noise sources such as steady traffic and general distant urban noise.
- 2.9 In terms of the guideline noise limits, BS 8233 guidance does state that a 5 dB relaxation may be applied where a development is necessary or desirable:

Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.

- 2.10 In terms of outdoor amenity spaces, BS 8233:2014 offers the following guidance:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50dB LAeq, with an upper guideline value of 55dB LAeq which would be acceptable in noisier environments. However, it is also recognised that these values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs



can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited.”

BS 4142:2014 – ‘Methods for Rating and Assessing Industrial and Commercial Sound’

- 2.11 BS 4142:2014 describes methods for assessing the likelihood of adverse comment arising as a result of commercial or industrial noise. The methodology requires the determination of the ‘noise rating level’ (or $L_{A,r,T,r}$) for the noise source(s) being assessed, which is the noise of the plant plus corrections for acoustic characteristics which attract attention, e.g. tonality, impulsivity, intermittency, etc.
- 2.12 The noise rating level is then compared against the prevailing ‘background sound level’ (or $L_{A90,T}$) at the noise-sensitive receptor considering the following guidance:
- ▶ Typically, the greater the difference, the greater the magnitude of the impact;
 - ▶ 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; and
 - ▶ The lower the rating 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. When 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.
- 2.13 It shall be noted that whilst the comparison of the ‘noise rating level’ against the prevailing background sound level for determining the potential impact is an important step of any BS 4142 assessment, consideration of the context in which the noise occurs can be equally as important. Equally, the magnitude of the noise in question can also be an important consideration.



IEMA Guidelines for Environmental Noise Impact Assessment

- 2.14 The Guidelines for Environmental Noise Impact Assessment document was published by the Institute of Environmental Management and Assessment (IEMA) in October 2014. The document sets out principles for noise impact assessments with respect to methodologies and procedures.
- 2.15 The document also covers definitions of noise impact and the effect of the noise. However, the guidelines do recognise that there is a complex relationship between sources and the receptors of noise and the resulting effect.
- 2.16 As a way of evaluating impacts due to noise changes in an environment, an example is provided in Table 7-14 of the guidelines, shown below.

Long-term Impact Classification	Short-term Impact Classification	Sound level change dB L _{pAeqT} (positive or negative) T = either 16hr day or 8hr night
Negligible	Negligible	≥ 0 dB and < 1 dB
	Minor	≥ 1 dB and < 3 dB
Minor	Moderate	≥ 3 dB and < 5 dB
Moderate	Major	≥ 5 dB and < 10 dB
Major		≥ 10 dB



Noise Surveys

Methodology

- 2.17 To inform the assessment, two unattended baseline noise surveys have been undertaken. The first one (LT1), at the existing southern boundary of the pub garden, and the second one (LT2) within the rear garden of 88 Luddesdown Road. The approximate noise monitoring positions are shown in Figure 3 overleaf.
- 2.18 Noise monitoring at LT1 was conducted using a Norsonic Nor-140 precision Class I sound level meter (serial no. 1405197), from around 14:00 hours Saturday 21st June 2025 to 10 am Monday 23rd June 2025. The microphone was mounted on a tripod at a height of approximately 1.5 m, with a direct line of sight to the pub garden.
- 2.19 The LT1 survey was undertaken over a warm, sunny and dry weekend, conditions during which the pub garden would likely be most in use and therefore more likely to have elevated levels of patron noise. Noise levels captured at the LT1 measurement position are considered to be representative of pub garden noise (when in use).
- 2.20 Noise level measurements at LT2 were taken from Monday 23rd June 2025, from around 10:30 am, to 5:50 pm Tuesday 24th June using the same sound level meter described above.
- 2.21 At both positions, the meter was set to log sound levels in contiguous 5-minute periods. Along the broadband noise levels, spectral data was also collected, as were audio recordings for any 'events' above 65 dB(A) L_p . The sound level meter was set up on a tripod at around a 1.5 m height above ground in free-field positions.



2.22 The photos below show the two noise survey setups.



LT1 monitoring position



LT2 monitoring position



- 2.23 Pre- and post-survey calibration checks were carried out which confirmed that no significant drift (+0.1 dB) had occurred during the survey. The calibration checks were undertaken using a Norsonic Nor1255 calibrator (serial no. 125525497).
- 2.24 All equipment used for the baseline noise survey had valid calibration certificates at the time of the survey, which are available upon request. The survey also conformed to the best practice data acquisition methodologies as set out in BS 7445¹.

Meteorological Conditions

- 2.25 Meteorological conditions during the measurement period were in line with recommendations for environmental noise surveys, with minimal wind (<5m/s) during the survey. An air temperature generally between 12°C and 32°C was noted during the survey. The conditions were noted as mostly sunny and warm.

Plant Noise Survey

- 2.26 In addition to the above surveys, attended noise level measurements were undertaken on site of forklift operations (Hyundai 18L 7m LPG forklift). This entailed sound level measurements at approximately 7 m (closest point) from the site forklift continuously operating in a roughly 5x5 m area over five minutes. Activities included lifting, moving and placing of various items, including plastic pallet boxes, metal crates filled with glass bottles and stacks of wooden pallets.
- 2.27 Measurements were undertaken using the same sound level meter described above, mounted at a height of 1.5 m in a free-field position over hardstanding.

¹ British Standard 7445 – Description and measurement of environmental noise



3.0 Baseline Survey Results

Existing Environment

- 3.1 At the time of setting up and collecting the noise survey, the main noise sources affecting the area surrounding The Lion were observed to be birdsong, local road noise. Low level noise from the neighbouring Silverhand Estate winery and the occasional aircraft flyover noise could also be heard when setting up the equipment.
- 3.2 During collection, operational noise from the winery and garden maintenance noise was more prominent.
- 3.3 Patron noise from the pub garden was also a notable contributor at the survey locations.
- 3.4 It is of note that the existing operation is of useful context due to the commercial business having patron and plant noise that have been running prior to this proposal, as is understood from client conversations, without complaint from nearby noise-sensitive receptors.

Long Term Survey (LT) Results

- 3.5 A summary of the long-term baseline noise level measurement results and derived values are presented below in Table 3. An overview of the LT survey results in graphical format is presented in Appendix C, with full data available if required upon request.

Table 3 Summary of Measured Noise Levels at the LT Survey Location

Location	Period	Noise Levels (dB)		
		Ambient, $L_{Aeq}^{[1]}$	Maximum, $L_{AFmax}^{[2]}$	Background, $L_{A90}^{[4]}$
LT1 (pub garden boundary)	Daytime (07:00 – 23:00)	48	68	42
	Night-time (23:00 – 07:00)	48	67	37
LT2 (residential garden)	Daytime (07:00 – 23:00)	49	70	38
	Night-time (23:00 – 07:00)	45	66	27

Notes to Table 3:

[1] Logarithmic average, [2] Arithmetic average of the 5-minute values, [4] Values representative of the prevailing background sound levels.



- 3.6 As can be seen from the noise survey results in the above table, at LT1, the weekday daytime (07:00 – 23:00) ambient noise level is in the region of 48 dB L_{Aeq} with the average of 5-minute maximum noise levels being around 68 dB L_{Amax} . Both the ambient and maximum nighttime values are very similar. However, note that the nighttime ambient noise level is skewed to the upside due to early morning dawn chorus birdsong. Without the contribution of the dawn chorus, overall nighttime noise would be around 45 dB L_{Aeq} .
- 3.7 The representative background sound levels are 42 and 37 dB L_{A90} for the day and night periods respectively.
- 3.8 Note that for the LT1 results, the period from 06:30 am 23rd June onwards (to conclusion of the survey a few hours later) has been omitted as these were affected by constant staff talking near the sound level meter and noisy gardening works at 88 Luddesdown Road.
- 3.9 In terms of LT2, in the rear garden of 88 Luddesdown Road, the survey results indicate similar noise levels when compared to LT1, except for the background levels which, at 38 and 27 dB L_{A90} , are lower, especially at night.

Existing Patron Noise

- 3.10 Analysis of existing patron noise contribution at survey position LT1 has been undertaken for the weekend afternoon periods when patron noise was more prominent. Table 4 below presents a breakdown of the noise levels.



Table 4 Measured Noise Levels at LT1		
Time	Ambient Noise Levels, L_{Aeq} (dB)	
	Saturday	Sunday
08:00 - 09:00	-	45
09:00 - 10:00	-	45
10:00 - 11:00	-	45
11:00 - 12:00	-	47
12:00 - 13:00	-	48
13:00 - 14:00	-	47
14:00 - 15:00	49	51
15:00 - 16:00	51	49
16:00 - 17:00	49	51
17:00 - 18:00	48	49
18:00 - 19:00	47	48
19:00 - 20:00	49	46

- 3.11 As can be seen from the above results, noise levels during opening times of the pub (12:00 onwards) ranged from 47 dB(A) to the highest 51 dB(A) ambient noise level. Before opening times, noise levels were very steady at around 45 dB L_{Aeq} . Taking the 45 dB(A) value as the underlying noise level, the noise contribution from the pub garden at position LT1 is estimated to have ranged from 43 to 50 dB(A) during the survey.



4.0 Potential Noise due to the Proposal

Noise Model

- 4.1 To help evaluate noise egress from the proposed commercial activities, a three-dimensional acoustic model of the site and its immediate surroundings has been created using Datakustik CadnaA noise modelling software (version 2022).
- 4.2 For the noise model calculations, ISO 9613² calculation settings were used along with the following inputs/settings:
- ▶ Ground absorption coefficient of 1, except for areas of hardstanding where an absorption coefficient of 0 has been used.
 - ▶ General building and barrier absorption coefficient of 0.2.
 - ▶ Two orders of reflection.
 - ▶ Ground heights for the site are based topographical survey data. For the surroundings area DEFRA LiDAR DTM data has been used.
 - ▶ Patron noise modelled as follows:
 - 16 no. tables of 4
 - 24 no. tables of 4
 - It is assumed that all tables are occupied with one person talking all of the time in a raised voice, 76(A) dB L_w . Source height of 1.2 m representative of a seated person.
 - ▶ BS 5228³ noise data for lorries (Table C11, Ref no.10,) has been used to estimate noise associated with the rerouted access route. See APPENDIX D: for further details. Source modelled as a line source (moving point source at 10 km/h), 1 no. lorry every hour, at a height of 1m.
 - ▶ The proposed flint boundary wall between the pub garden and the residential garden to the south is 1.9 m in height.

² ISO 9613-2:1996 'Attenuation of sound during propagation outdoors- Part 2: General method of calculation

³ BS 5228-1:2009+A1:2014: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise



- ▶ Building heights based on information provided (survey and elevation drawings). Where no information was available, heights have been estimated from Google Street View.
- ▶ The existing timber fencing around 88/89 Luddesdown Road gardens appears to be of good quality. Thus, it is assumed to provide acoustic screening for the analysis of existing noise conditions..
- ▶ In line with the proposed development, a 2.4 m acoustic grade barrier (minimum density of at 15 kg/m²) has been implemented around the garden perimeters of properties 88/89 Luddesdown Road.

Patron Noise

- 4.3 Whilst patron noise associated with the pub garden would mainly occur during warmer periods of the year, the proposed extended garden area has the potential to affect nearby noise-sensitive receptors. As such, noise level predictions have been undertaken, with the results shown below in Figures 4 and 5 in the form of noise level contours (and receptor locations) for the existing and proposed scenarios respectively.

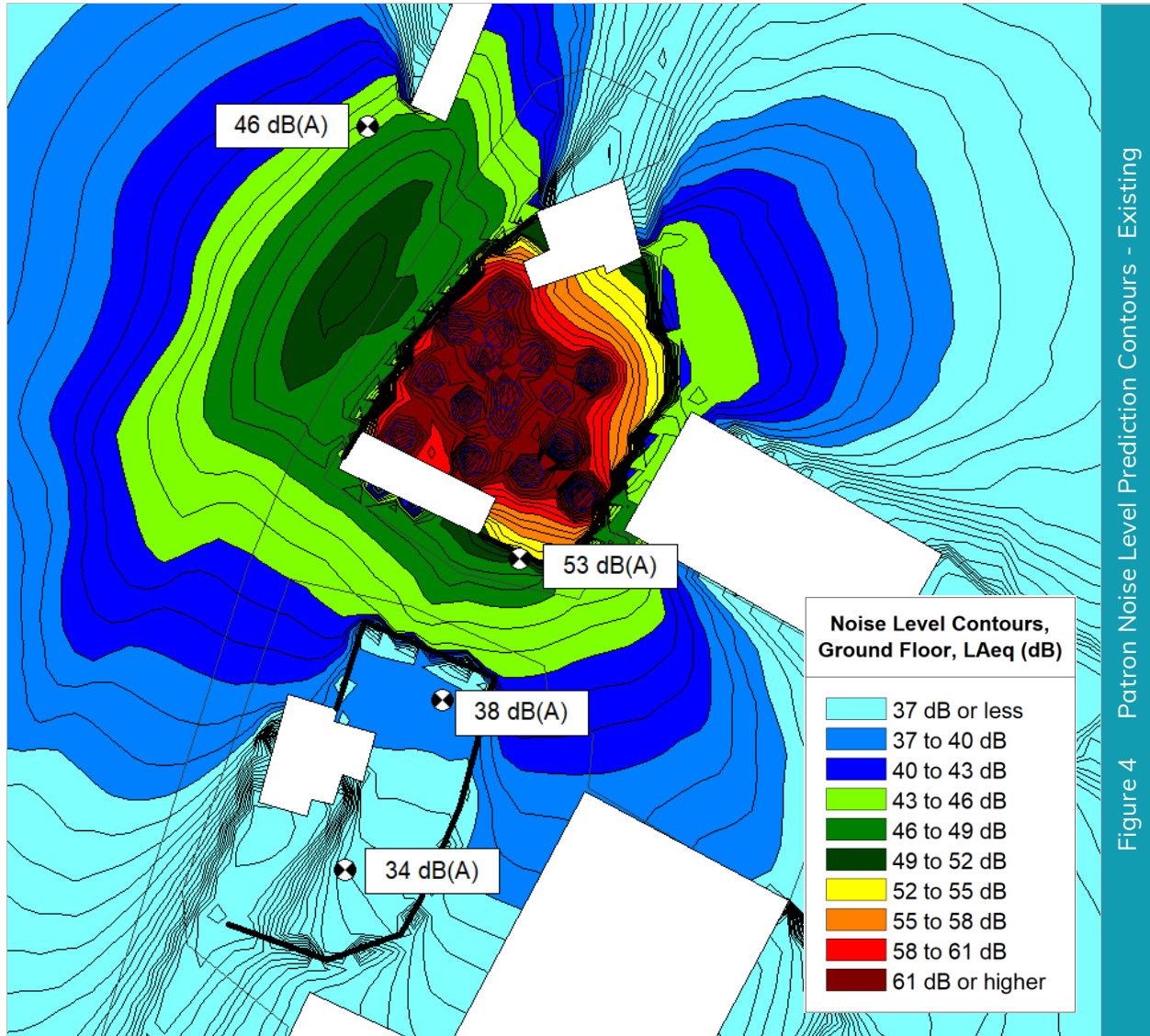


Figure 4 Patron Noise Level Prediction Contours - Existing

- 4.4 As can be seen from the above results for the 'existing' scenario, 53 dB(A) is predicted at the southern pub garden boundary. This value tallies reasonably well with the highest pub garden noise level of 50 dB(A) derived from the LT1 survey, although a little higher, so it can be considered representative of more conservative conditions (full capacity). Based on these predictions, 'existing' patron noise contribution in the rear garden of 88 Luddesdown Road can be expected to be in the region of 38 dB(A)

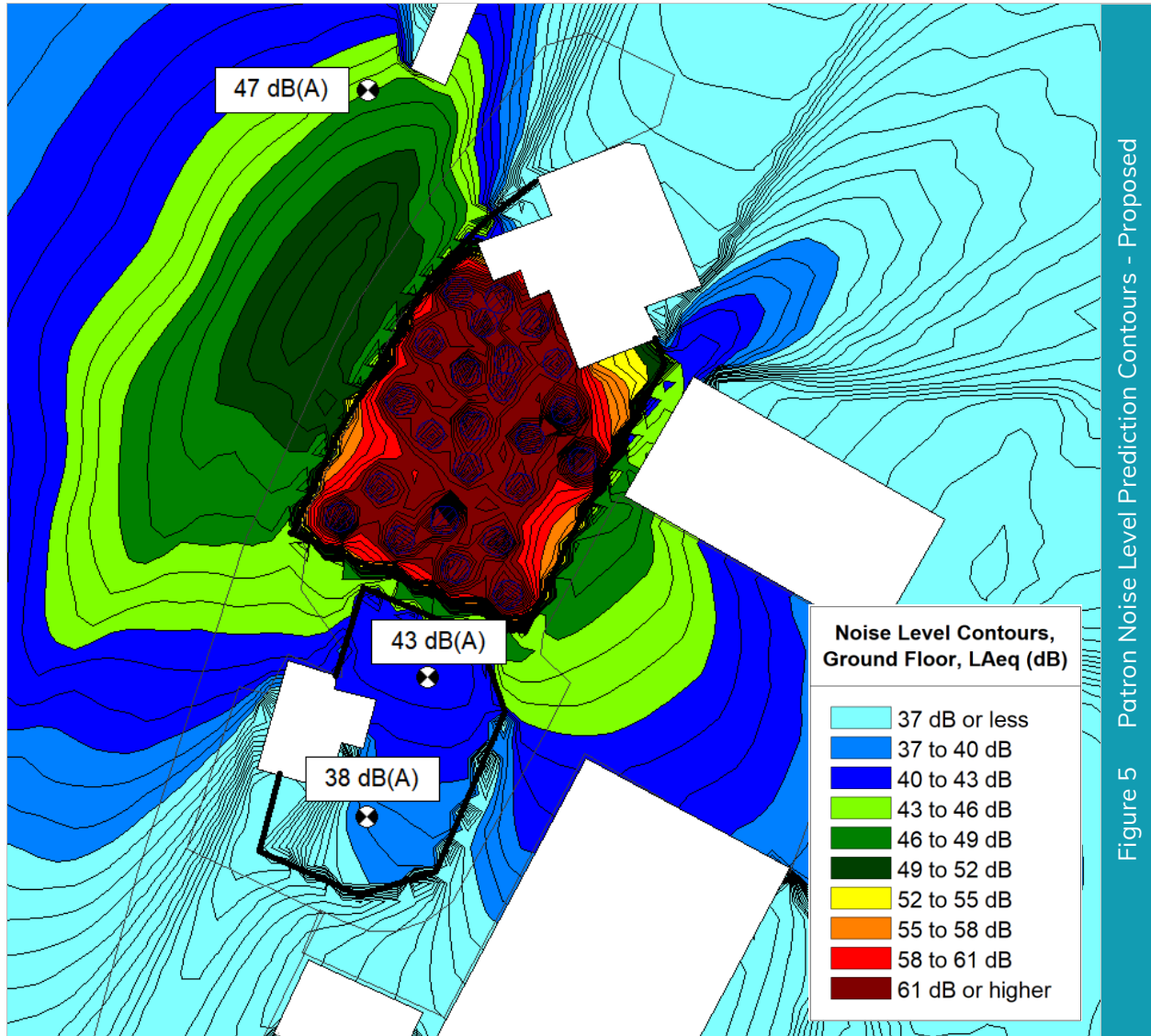


Figure 5 Patron Noise Level Prediction Contours - Proposed

- 4.5 Based on the proposed expansion of the pub garden, and also taking into account alterations due to the new access route, patron noise levels in the rear garden of 88 Luddesdown Road are expected to reach approximately 43 dB(A).
- 4.6 The noise modelling results project that an increase in patron noise contribution of around 5 dB would occur.
- 4.7 As discussed previously, the existing underlying daytime ambient noise level in the area could be taken as 45 dB L_{Aeq} . When considering the existing underlying noise conditions (45 dB(A)), existing patron noise contribution (38 dB(A)), and future patron noise contribution (43 dB(A)), overall noise levels of 46 and 47 dB(A) can be expected for the

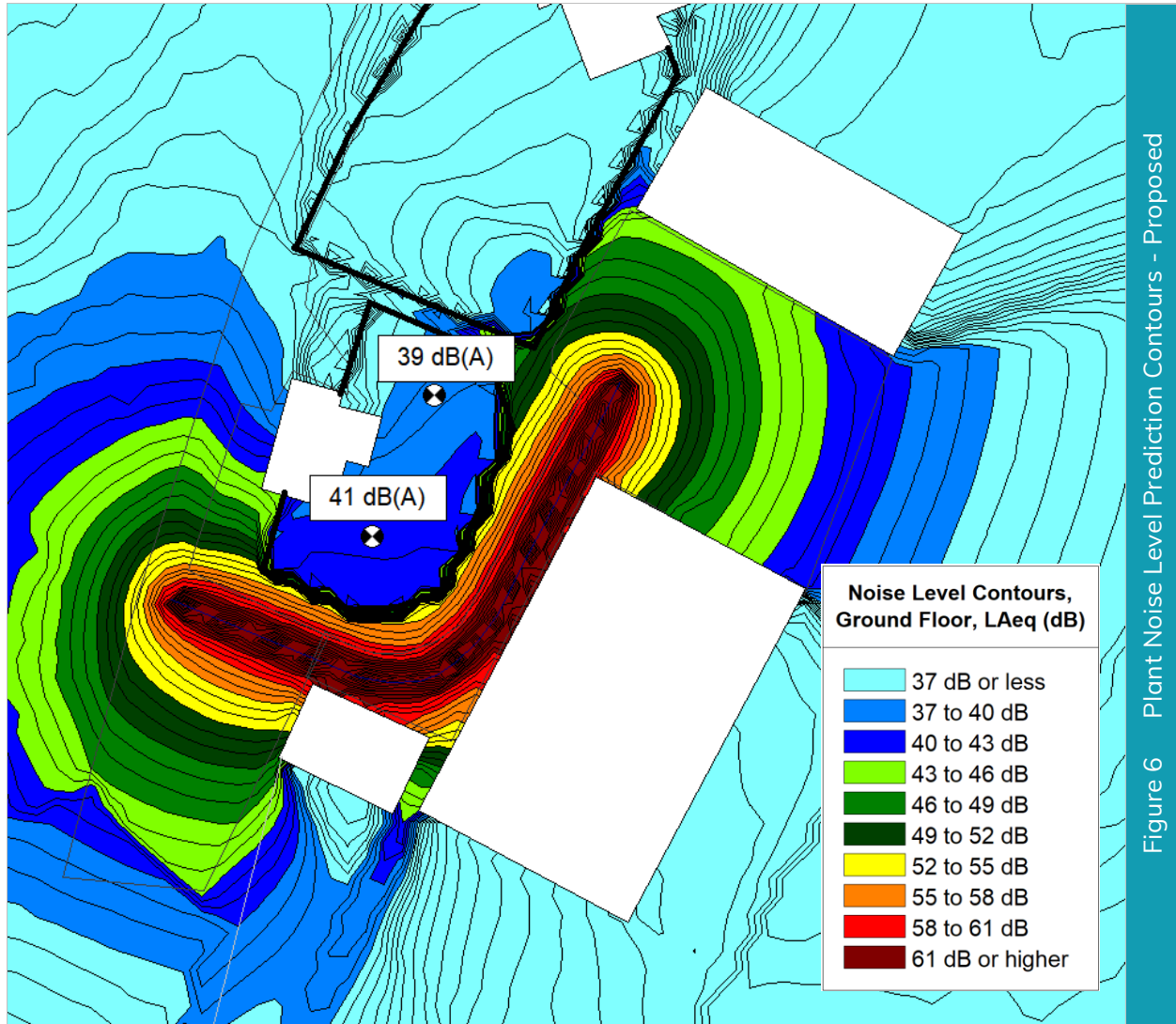


existing and future predicted scenarios respectively. Therefore, the proposed extension of the pub garden would result in an increase of around 1 dB (+1.3 dB).

- 4.8 In terms of the IEMA example classification, an increase of 1 dB can be considered as 'minor' in the short term and 'negligible' longer term. Given that, (a) the increase in noise is only 'minor', (b) patron noise is expected to normally be lower than the predicted full capacity scenario, (c) noise levels are to remain below the 50 dB(A) BS 8233 threshold for outdoor amenity areas, and (d) the increase in patron noise is only for relatively short periods each week (and only when the weather is fair), it is not expected to detrimentally affect the residents of 88 Luddesdown Road.
- 4.9 Notwithstanding the above, both 88 and 89 Luddesdown Road properties are under the ownership of the Applicant and, as understood, are only used by MDCV staff (e.g. when visiting from France). It would be reasonable to assume that people occupying these premises would therefore be (significantly) less sensitive to any operational noise, and as such, further reduce any risk of excessive noise effects.
- 4.10 For receptors located towards the north of the site, Brookers Farm and Darnley Cottage, the noise level predictions show that the proposed pub garden extension would have no effect on the noise climate.

Plant Noise

- 4.11 Plant noise level predictions associated with the proposed access road change are shown in the figure below.





4.12 BS 4142 analysis of the operational noise is shown below.

Table 5 BS 4142 Assessment of Plant Noise – 89 Luddesdown Road		
Parameter	dB	Notes
Representative Background Sound Level (L_{A90})	38	-
Residual Sound Level (L_{Aeq})	49	-
Predicted Specific Source Level (L_S)	41	Specific source level of HGV movements at proposed access road at the rear garden
Acoustic Feature Correction	+3	+3 dB for other characteristics
Noise Rating Level ($L_{Ar,Tr}$)	44	At the worst-affected receptor
Excess Rating vs Background Level	+6	Adverse impact likely, depending on context and magnitude of the noise

4.13 The results from the BS 4142 assessment in Table 5 above show that the noise rating level associated with the altered commercial activity (access road) would exceed the prevailing background sound level by about 6 dB. This indicates that, under typical circumstances, adverse comment arising due to the proposed operational change would be likely, depending on context.

4.14 However, the context in which the noise would occur is very important when determining whether the proposal would have an effect on amenity, as considered below:

- ▶ Other than the relocation of the loading area and access route, on-site activities at the winery and associated existing noise egress would remain unchanged. In other words, the properties at 88/89 Luddesdown Road are already exposed to commercial activity noise.
- ▶ Usage of the access road by commercial vehicles would be sporadic and infrequent (as per existing situation). On average, this is understood to be about twice a day. During harvest season, the frequency will increase to about four per day, but overall will still be low.
- ▶ As mentioned previously, the property at 89 Luddesdown Road, where there is the highest potential for adverse impact, is under the ownership of the Applicant



and is only used by MDCV staff. This is important context, as said arrangement would make any residents (significantly) less sensitive to any operational noise.

- ▶ Given how infrequent HGV movements are expected to be, it could also be argued that BS 4142 is not best rubric to assess the change in noise due to the proposed access route.

- 4.15 When considering the important context described above, as well as the specific sound level of 41 dB(A) being objectively low (especially given the context of the existing conditions) and also well below the 49 dB(A) residual sound level, the +6 dB rating level excess over background noise would most likely be acceptable.
- 4.16 In terms of the noise-sensitive receptors further south of the site, i.e. Cutteridge Cottage and The Old Rectory, calculations show that plant noise contribution would be around 19 dB(A), which would be 19 dB below background noise conditions in the area and generally inaudible.



5.0 Summary and Conclusions

- 5.1 This report has presented the findings of a Noise Assessment relating to the proposed extension at The Lion pub garden and rerouting of the Silverhand Estate winery access road. The assessment identified key sources of noise, quantified prevailing and source noise through monitoring. Using these data and consideration of the proposal, the potential for future noise effects have been assessed, against Local and British guidance where applicable.
- 5.2 Assessment of prevailing environmental noise levels has been undertaken over what is deemed to have been a typical period, including a weekend with good weather. The prevailing noise environment was observed as being tranquil when on site, as expected for such a rural location. However, survey recordings do, as expected, show patron noise during parts of the weekend.
- 5.3 To help evaluate potential noise changes due to the proposed development, a detailed noise model of the site and its surroundings was developed.
- 5.4 The noise model calculations show that, whilst a slight increase in patron noise due to the pub garden extension can be expected at the worst-affected nearby dwellings, the increase can be classified as 'minor' in the short term and 'negligible' in the long term when compared to existing conditions.
- 5.5 With respect to operational plant noise due to the proposed access road, BS 4142 calculations show that commercial activity could exceed the prevailing background sound level by about 6 dB. This indicates that, under normal circumstances, adverse comment arising due to the proposed operational change could occur, depending on context.
- 5.6 In this instance, the context in which the access road noise would occur is very important due to (a) the noise in question being very infrequent (on average twice a day for a short period), and (b) the property where the adverse noise impact could occur (89 Luddesdown Road) is under the ownership of the Applicant. Moreover, the property is only used by MDCV staff, which is important context, as any residents would therefore be (significantly) less sensitive to any operational noise.



- 5.7 At other noise-sensitive receptors in the area, operational noise from the proposed commercial operations would be well below background noise conditions.
- 5.8 In light of the above, the projected plant noise increase would most likely be acceptable, and the proposed changes would not have any direct effect on other noise-sensitive receptors in the area.



APPENDIX A: Acoustic Terminology

Parameter	Description
Sound	A sound wave can be viewed as small pressure fluctuations in an elastic medium such as air. When the frequencies of the pressure fluctuations are within the audible range, the human ear responds to sound waves which produces the sensation of hearing. There are two basic characteristics of sound: amplitude and frequency. Amplitude relates to the perceived loudness of a sound whereas the pitch of a sound corresponds to the frequency.
Noise	Noise, a subjective term, is essentially unwanted sound . It is very much dependent on the receptor's perception of the sound.
Decibel (dB)	The sound pressure is measured in Pascals. The human ear responds to a wide range of sound pressures, from 0.00002 to 20 Pascals. Given this wide range of values, it is convenient to express these in a logarithmic scale, the decibel (dB). The decibel is a logarithmic scale representing the measurement unit of sound pressure levels or noise levels relative to the threshold of hearing (20×10^{-6} Pascals). Zero decibel represents the threshold of hearing. The higher the value the louder the sound, with the value around 110 decibel being the level at which hearing becomes uncomfortable. Around 130 decibel is the threshold of pain at which hearing becomes painful.
Frequency (Hz)	The pitch of a sound relates to the frequency, which is expressed in Hertz (Hz). The audible range for human hearing typically ranges from 20 Hz to 20 kHz, but this tends to decrease with age. A pure tone, e.g. as produced by a tuning fork, contains sound of a single frequency (440 Hz). In real life, most sound consists of complex waves containing sound waves of multiple frequencies.
A-weighting	Human hearing is not linear, i.e. the perceived loudness of sound varies with both frequency and amplitude. To better represent the human hearing response, frequency 'weightings' are applied to sound. There are various weighting networks best suited to specific conditions. However, in practice, the A-weighting network has become the generally accepted 'correction' for representing loudness. When a weighting filter has been applied to a value, the weighting type is added to the descriptor, L_{Aeq}, L_{pA}, etc, or just after the decibel, dBA or dB(A)

Parameter	Description
Octave Bands or 1/3-Octave Bands	Whilst single figure values are useful, often spectral data is required for analysis and/or acoustic specification. To represent the frequency content, sound level or acoustic properties are presented in specific frequency bands, also known as octave bands. The frequencies of octave bands have been internationally standardised. For example, the 500 Hz octave band (500 Hz being the centre frequency) has a range from 354 Hz to 707 Hz. Where finer spectral detail is required, 1/3-octave band data can be used. Each octave band is divided into three 1/3-octave bands.
Sound Pressure Level (SPL or L_p)	The sound pressure level is indicative of the sound wave strength and has good correlation with perceived loudness. Sound pressure is expressed in Pascals and, for convenience, is expressed
Sound Power Level (SWL or L_w)	The sound power is the overall acoustic energy radiated by a source over a specific period and is expressed in Watts. It is an inherent property of the source and, unlike sound pressure, does not depend on the distance to the source. As sound power values vary greatly, it is convenient to express these as a level in decibels, the sound power level, SWL or L_w (referenced to 10^{-12} Watts).
$L_{Aeq,T}$	The A-weighted equivalent continuous sound level over the period T. Often also referred to as the ambient noise level. This is the sound level that is equivalent to the total average energy of noise recorded over a given period.
L_{Amax}	The A-weighted maximum instantaneous noise level.
L_{A10}	The A-weighted statistical sound level which is exceeded 10% of the given measurement period. In the UK, this level is usually used to describe road traffic noise .
L_{A90}	The A-weighted statistical sound level which is exceeded 90% of the given measurement period. This level is usually synonymous with the background sound level and generally describes the underlying level of sound that is experienced when specific events are not taking place.
R_w	The weighted (w) sound reduction index (R), a single figure rating of the laboratory airborne sound insulation performance of a construction, usually measured across the frequency range 100-3150Hz. The higher the value, the greater the sound insulation, and the more onerous the requirement.

Parameter	Description
$D_{nT,w}$	The weighted (w) sound insulation (D), a single figure rating of the in-situ airborne sound insulation performance of a construction. The sound insulation value is standardised (nT) to a reference reverberation time for typical conditions. The higher the value, the greater the sound insulation.
$L'_{nT,w}$	The weighted (w) impact sound pressure level (L), a single figure rating of the in-situ impact sound insulation performance of a construction. The sound insulation value is standardised (nT) to a reference reverberation time for typical conditions. The lower the value, the greater the sound insulation.
C or C_{tr}	These are spectrum adaptation terms for taking into account the effect of different sound spectra. C and C_{tr} are corrections for pink noise and traffic noise respectively and are added to single figure quantities, e.g. $R_w + C_{tr}$
$D_{n,ew}$	The weighted (w) element (e) normalised (n) level difference (D), an indicator of the ability of a small building element (such as a trickle ventilator) to reduce sound in a particular frequency band. The higher the value, the greater the sound reduction, and vice versa.
Reverberation Time (RT60 or T60)	Reverberation time relates to the echoing decay of sound in a room. More specifically, the reverberation time (RT60) is the time it takes for the sound pressure level to drop by 60 dB after excitation. The value is expressed in seconds. In many situations, conditions do not allow for the entire 60 dB decay time to be measured. Where this is the case, a reduced part of the decay can be measured and the results extrapolated; typically these are the T20 or T30. The higher the value, the more reverberant a space is.



APPENDIX B: Planning Policy and Guidance

NATIONAL PLANNING POLICY FRAMEWORK, 2024 (NPPF)

The National Planning Policy Framework (NPPF) includes the following statements relating to noise and the requirement to take it into account in the planning process.

Section 15, paragraph 187 (e) of NPPF states:

- preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Section 15, paragraph 198 of NPPF states:

- (a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.
- (b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason;

Paragraph 200 of NPPF further elaborates on the consideration of existing businesses, as follows:

- Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

The NPPF does not provide absolute limits on noise that are acceptable or unacceptable in a given situation. It does, however, set out the "need to ensure that developments do not give rise to significant adverse impacts on health and the quality of life". In addition, the operations of existing businesses are also protected, with reference to ensuring new developments do not have an adverse effect on their operations.

NOISE POLICY STATEMENT FOR ENGLAND, 2010 (NPSE)

The Noise Policy Statement for England (NPSE) applies to all forms of noise including environmental noise, neighbour noise and neighbourhood noise but does not apply to noise in the workplace. The Government recognizes that the effective management of noise requires a coordinated and long-term approach that encompasses many aspects of modern society.

The long-term vision of Government noise policy is set out to promote 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 three aims:

- ▶ avoid significant adverse impacts on health and quality of life;
- ▶ mitigate and minimise adverse impacts on health and quality of life; and
- ▶ where possible, contribute to the improvement of health and quality of life.

The NPSE introduces the concept of NOEL, LOAEL and SOAELs, which are described below:

- ▶ NOEL – No Observed Effect Level – This is the level below which no observable effect can be detected.
- ▶ 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 effects on health and quality of life can be detected.

PLANNING POLICY GUIDANCE – NOISE, 2014

This guidance is provided online within the UK Government Planning System. The guidance expands upon the concepts of Observed Effect Levels and the following table is provided.

Planning Policy Guidance - Noise exposure hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Outcome
No Observed Effect Level			
Not Noticeable	No Effect	No Observable Effect	No specific measures required
Noticeable but 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

ProPG: PLANNING & NOISE PROFESSIONAL PRACTICE GUIDANCE ON PLANNING & NOISE NEW RESIDENTIAL DEVELOPMENT MAY 2017

The primary goal of ProPG is to assist the delivery of sustainable development by promoting good health and wellbeing through the effective management of noise. It seeks to do that through encouraging a good acoustic design process in and around proposed new residential development having regard to national policy on planning and noise.

ProPG advocates a systematic, proportionate, risk based, 2-stage, approach. The approach encourages early consideration of noise issues, facilitates straightforward accelerated decision making for lower risk sites, and assists proper consideration of noise issues where the acoustic environment is challenging. It is envisaged that following the guidance contained in this document will increase the likelihood of success of planning applications for new residential development, yet it also provides a clear basis for recommending refusal of new housing development on noise grounds where necessary.

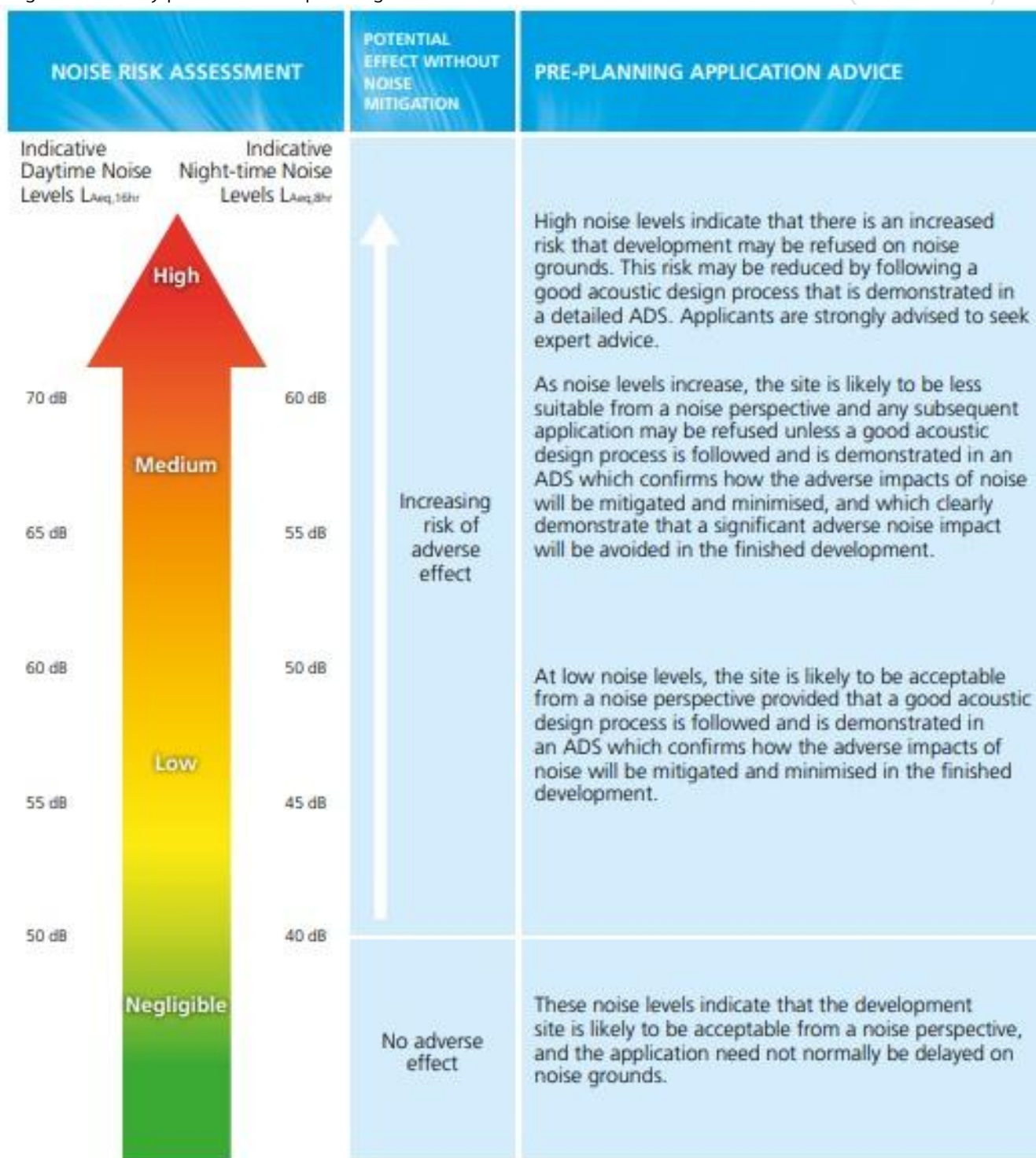
Stage 1: Initial Site Noise Risk Assessment

An initial noise risk assessment of the proposed development site should be conducted by a competent noise practitioner at the earliest opportunity, before any planning application is submitted. The noise risk assessment should provide an indication of the likely risk of adverse effects from noise were no subsequent mitigation to be included as part of the development proposal. It should indicate whether the proposed site is considered to pose a negligible, low, medium or high risk from a noise perspective.

Stage 2: Full Assessment – the four key elements

- ▶ Element 1 – Good Acoustic Design Process Stage 2:
- ▶ Element 2 – Internal Noise Level Guidelines Stage 2:
- ▶ Element 3 – External Amenity Area Noise Assessment Stage 2:
- ▶ Element 4 – Assessment of Other Relevant Issues

Figure: Summary plan for ProPG planning advice



The following British Standards and Building Regulations have been considered for this assessment.

BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings'

This standard provides information and guidance on sound insulation and noise reduction for buildings. It deals with the control of external noise and outlines recommendations for occupied rooms.

The following table is taken from the document outlining requirements for internal noise levels in residential accommodation.

Indoor Ambient Noise Levels for Dwellings (BS 8233:2014)

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35dB $L_{Aeq,16Hr}$	-
Dining	Dining Room/Area	40dB $L_{Aeq,16Hr}$	-
Sleeping	Bedroom	35dB $L_{Aeq,16Hr}$	30dB $L_{Aeq,8Hr}$

The noise levels presented are based on existing WHO guideline values. The document further recommends that guideline value may be set in terms of SEL or $L_{Amax,F}$, if systematic individual noise events are happening. The values are depending on the character and number of events per night. Sporadic noise events could require separate values. In this instance a target value of 45 dB L_{Amax} has been established as the average L_{Amax} level not to be exceeded in bedrooms at night.

External Amenity Space

BS 8233:2014 offers the following guidance regarding outdoor amenity space:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50dB L_{Aeq} , with an upper guideline value of 55dB L_{Aeq} which would be acceptable in noisier environments. However, it is also recognised that these values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited."

BS 4142: 2014 'Methods for rating and assessing industrial and commercial sound'

BS 4142:2014 describes methods for determining and assessing noise levels from noise sources with a view to determining the likelihood of adverse impact.

The document has been developed for the purposes of:

- ▶ Investigating complaints,
- ▶ Assessing sound from proposed new, modified or additional sources of sound of an industrial and / or commercial nature; and
- ▶ Assessing sound at proposed new dwellings or premises used for residential purposes.

The document is now suitable for the determination of noise nuisance. Furthermore, that standard is not intended to apply to the following sources of noise:

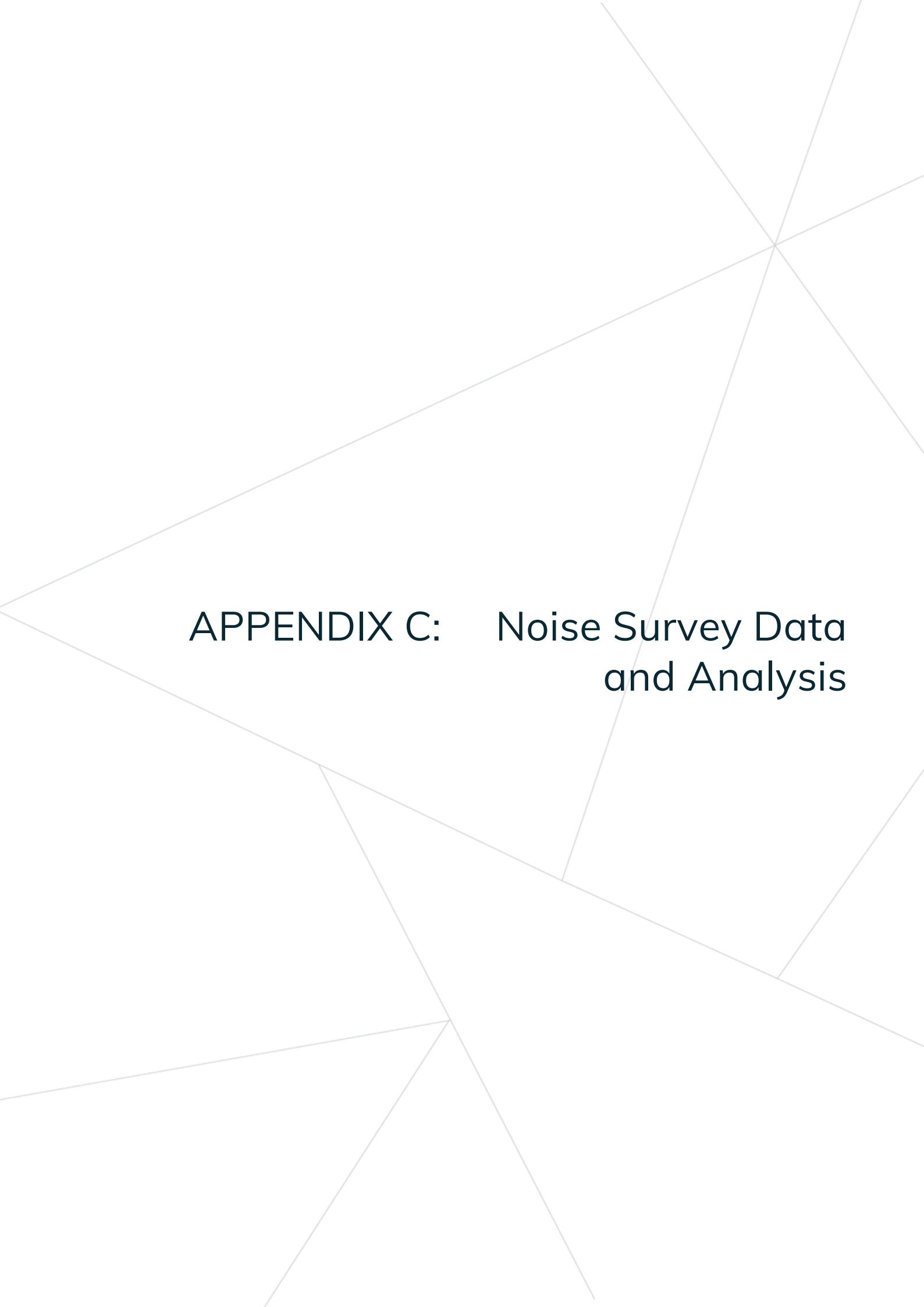
- ▶ recreational activities, including all forms of motorsport;
- ▶ music or other entertainment;
- ▶ shooting grounds;
- ▶ construction and demolition;
- ▶ domestic animals;
- ▶ people;
- ▶ public address systems for speech;
- ▶ other sources falling within the scopes of other standards or guidance.

The methodology requires the determination of the specific sound level, corrected for characteristic feature in order to produce a rating level. The rating level is then compared against the background noise level (expressed as $L_{A90,T}$), thereby producing an 'excess of Rating over background sound level' figure. This figure is then used for assessment of likelihood of adverse impact.

The standard places great emphasis on the context of the sound environment that is being assessed and the development overall. This is an essential part of the assessment process, particularly when predicting likelihood of adverse impact. However, for guidance the following is included in the standard:

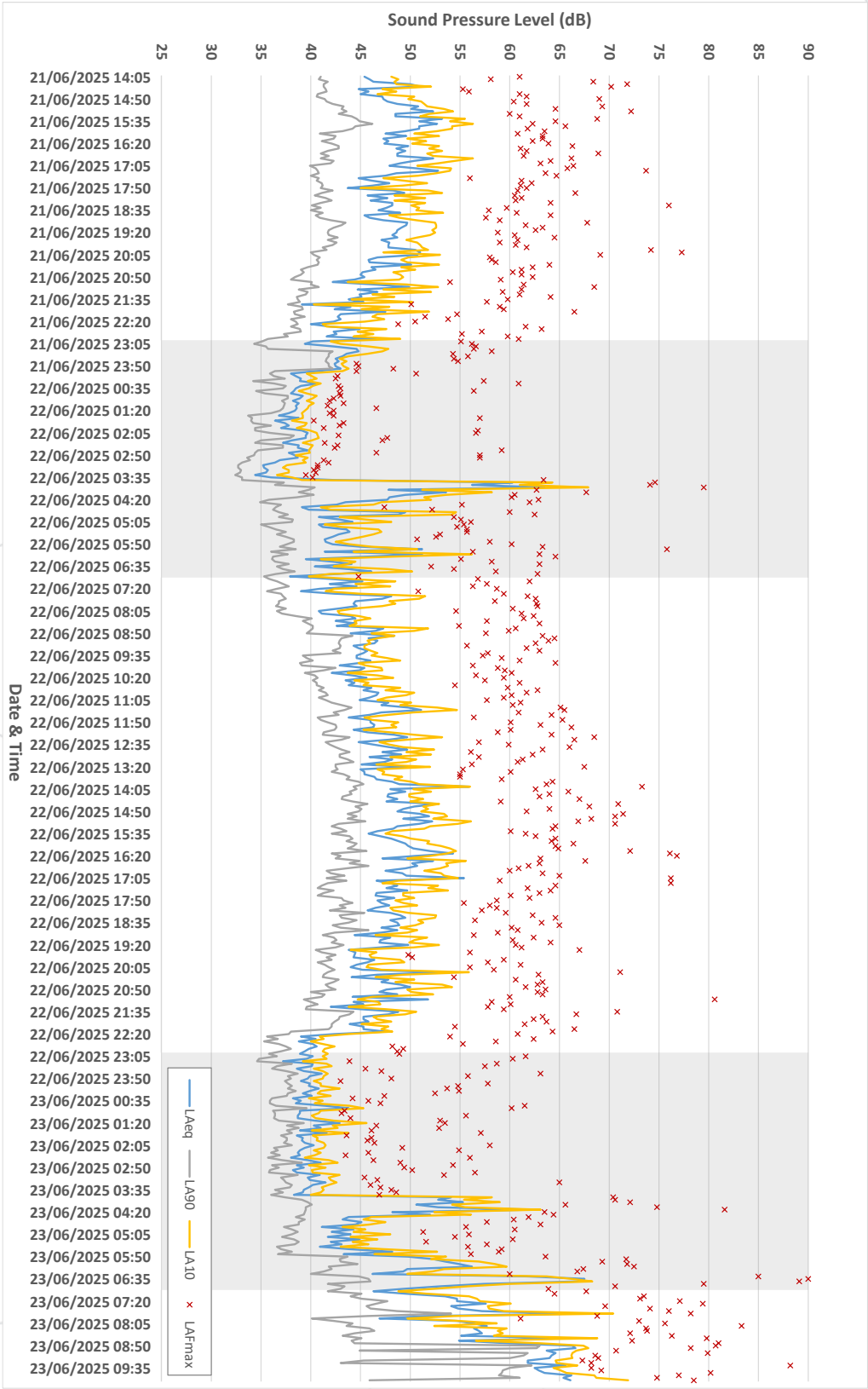
- ▶ Typically, the greater the difference, the greater the magnitude of the impact;
- ▶ A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;

- ▶ A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and
- ▶ The lower the rating 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. When 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.

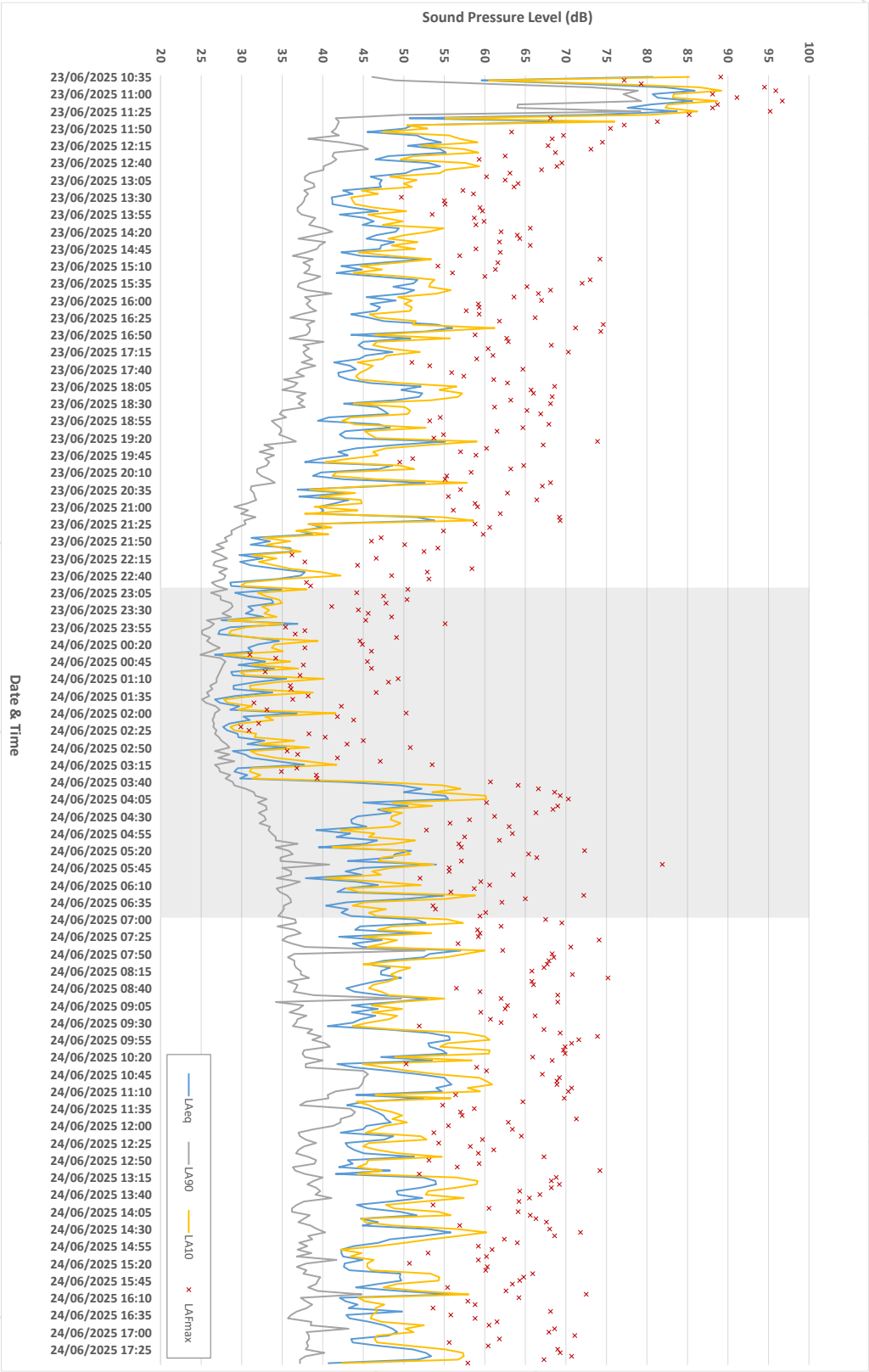


APPENDIX C: Noise Survey Data and Analysis

Long Term Noise Survey (LT1)



Long Term Noise Survey (LT2)





APPENDIX D: BS 5228 Spectral Data

Octave Sound Power Level (Lw) Noise Data Table

The BS 5228 source data used for the theoretical modelling of articulated HGV access road operations have been summarised below:

Name	QTY	% on time	63	125	250	500	1k	2k	4k	8k	Source
HGVs articulated 32t	1 no.	1 per hr	119	107	105	102	99	97	92	89	BS 5228, c.11, 10



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