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CONSULTING

Roger Parry and Partners

Central Garage, King Street, Acrefair

Noise Impact Assessment

DC5582-NR1

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Report Version Issue Log

Report Number	Issue Date	Note or Change	Author	Reviewed	Approval for Issue
DC5582-NR1	20.10.26	Report Issue	TS	AMS	LS

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Limitations to this Report

This report entails a physical investigation of the site with a sufficient number of sample measurements to provide quantitative information concerning the type and degree of noise affecting the site. The objectives of the investigation have been limited to establishing sources of noise material to carrying out an appropriate assessment.

The number and duration of noise measurements have been chosen to give reasonably representative information on the environment within the agreed time, and the locations of measurements have been restricted to the areas unoccupied by building(s) that are easily accessible without undue risk to our staff.

As with any sampling, the number of sampling points and the methods of sampling and testing cannot preclude the existence of “hotspots” where noise levels may be significantly higher than those actually measured due to previously unknown or unrecognised noise emitters. Furthermore, noise sources may be intermittent or fluctuate in intensity and consequently may not be present or may not be present in full intensity for some or all of the survey duration.

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1.0 INTRODUCTION

Roger Parry and Partners have appointed Dragonfly Consulting to carry out a Noise Impact Assessment for a change of use from a bus depot to a B1/B2 premises for the repair of cars, located at King Street, Acrefair, Wrexham.

The noise assessment has been conducted with reference to the Planning Guidance (Wales): Planning Policy, TAN11:1997 and the appropriate British Standards, recognised guidance and reference documents relevant to this site.

This report describes a noise survey of the site and the subsequent analysis to determine the noise environment of the proposed development. It then compares the results with the adopted criteria.

A glossary of technical terminology is included in Appendix A to support this document.

1.1 Site Conditions

1.1.1 Existing Site Conditions

The site is that of a former bus depot with a history of bus/coach maintenance and repair located at King Street, Acrefair, Wrexham. The site is bound by the following:

- Surrounded by residential dwellings from all directions; and
- Further afield north-west is another automotive business.

1.1.2 Proposed Site Conditions

It is proposed to change the use of the site from a bus depot to a B1/B2 premises for the repair of cars and welding. The only proposed addition to the site is an area to the south designated for car parking, consisting of 8 spaces.

The proposed operational hours for the development which will be considered throughout the assessment are:

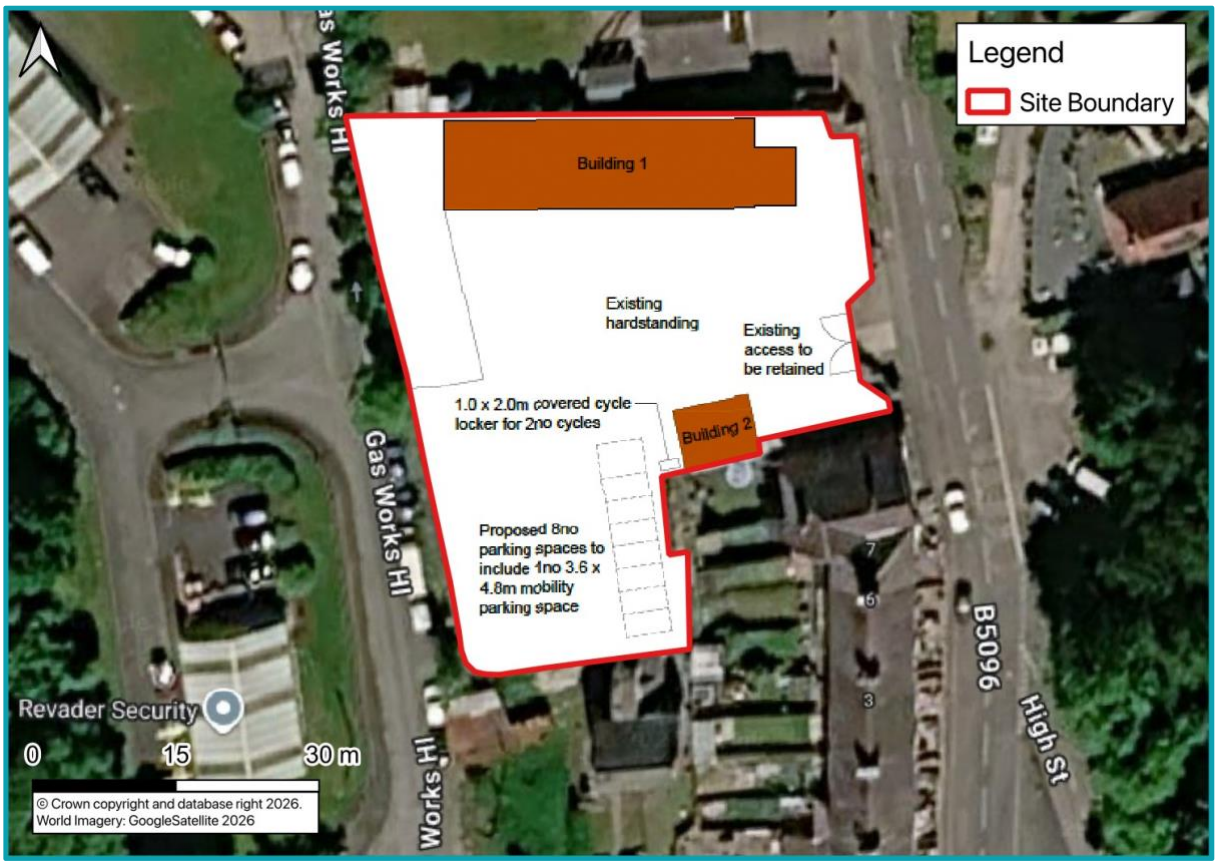
- Monday – Saturday: 0800 - 1700h.

The proposals contain no introduction of fixed plant. The main noise source associated with the proposal is the maintenance of vehicles within the facility. While the site is applying for planning permission for a change of use, the proposed activities within the facility are not expected to present an entirely new noise source when compared to the consented works associated with the bus depot.

The proposed layout of the site, provided by Roger Parry and Partners (drawing no. 81008 / GH / 003) can be seen in Figure 1.1 overleaf.

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Figure 1.1
Site Plan



1.1.3 Noise Sensitive Receptor (NSR) Location

Noise contributions have been considered at the following noise sensitive receptor (NSR) based on their proximity to the site:

Table 1.1
Noise Sensitive Receptor (NSR) Locations

Reference	Address	Cardinal/Ordinal Direction	Description
NSR1	Cwm Y Glo, King Street, LL14 3RH	North	2-Storey Residential Dwelling
NSR2	The Haven, Station Road, LL14 3RN	East	Bungalow
NSR3	River Cottage, King Street, LL14 3RE	South	2-Storey Residential Dwelling
NSR4	Residential Dwellings, King Street, LL14 3RF	South	3-Storey Residential Dwelling

The assessment has been undertaken based on predicted noise contributions at ground floor (1.5m), first floor (4.0m) and second floor (6.5m) where applicable.

The NSR locations are shown in Appendix C.

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2.0 GUIDANCE

2.1 National Policy

2.1.1 Planning Guidance (Wales): Planning Policy

Planning Guidance (Wales): Planning Policy provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business. It outlines some of the main considerations which local planning authorities should take into account in drawing-up development plan policies and when determining planning applications for development which will either generate noise or be exposed to existing noise sources.

2.1.2 Technical Advice Note (Wales) 11, Noise – October 1997

The Technical Advice Note (TAN), as published in October 1997 and amended in November 2015, provides guidance to assist in the technical evaluation of noise assessment and the assessment of the significance of any subsequently determined impacts.

With reference to noise from commercial developments, TAN 11:1997 states:

"B17: The likelihood of complaints about noise from industrial development can be assessed, where the Standard is appropriate, using guidance in BS 4142: 1990. Tonal or impulsive characteristics of the noise are likely to increase the scope for complaints and this is taken into account by the "rating level" defined in BS 4142. This "rating level" should be used when stipulating the level of noise that can be permitted. The likelihood of complaints is indicated by the difference between the noise from the new development (expressed in terms of the rating level) and the existing background noise. The Standard states that, 'A difference of around 10 dB or higher indicates that complaints are likely. A difference of around 5 dB is of marginal significance'. Since background noise levels vary throughout a 24 hour period it will usually be necessary to assess the acceptability of noise levels for separate periods (e.g. day and night) chosen to suit the hours of operation of the proposed development. Similar considerations apply to developments that will emit significant noise at the weekend as well as during the week. In addition, general guidance on acceptable noise levels within buildings can be found in BS 8233: 1987."

Additionally, Table 2.1 provides detail of the noise exposure categories set out within TAN 11:1997.

Table 2.1
Noise Exposure Categories

Category	Description
A	Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as desirable.
B	Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection.
C	Planning permission should not normally be granted. Where it is considered that permission should be given, for example, because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
D	Planning permission should normally be refused.

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It should also be noted that, as of 20th January 2023, responses to a consultation on proposed changes and updates to TAN 11 are currently being reviewed as part of the Noise and Soundscape Plan for Wales 2023-2028. These proposals include:

- Updating and replacing the existing advice on noise currently contained in TAN 11: Noise 1997;
- Adding advice relating to air quality and soundscape; and
- Issuing a supporting document for the TAN on the subject of soundscape design.

However, as of the issue date of this report, the outcome of the changes to the national strategy has not been published. As such, no specific consideration has been given to any proposed changes and updates.

2.2 Local Policy

The Wrexham County Borough Council (WCBC) states that their Local Development Plan 2 (LDP2) is no longer the adopted plan. However, as no local plan has yet replaced this version, the relevant policy relating to noise from the un-adopted local plan has been reproduced below.

"Policy DM1: Development Management Considerations

Development proposals, where relevant, must:

…

iii) Safeguard the environment from the adverse effects of pollution of water, land, noise, light or air, or land instability, arising from development;"

2.3 Best Practice and Other Relevant Guidance

2.3.1 British Standard (BS) 7445-1:2003 – Description and Measurement of Environmental Noise – Part 1: Guide to Quantities and Procedures

This document defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities.

The methods and procedures described in this British Standard are intended to be applicable to sounds from all sources, individually and in combination, which contribute to the total noise at a site. This British Standard does not specify limits for environmental noise.

2.3.2 ISO 9613-2:2024 Attenuation of Sound during Propagation Outdoors

ISO 9613-2:2024 presents a calculation methodology for the determination of the attenuation of sound outdoors. The methodology enables the prediction the levels of environmental noise at a distance from a variety of sources.

2.3.3 BS 4142:2014+A1:2019 Method for Rating and Assessing Industrial and Commercial Sound

BS 4142:2014+A1:2019 describes methods for rating and assessing sound of an industrial and/or commercial nature. The methods use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

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3.0 ASSESSMENT METHODOLOGY

3.1 Assessed Sources of Environmental Noise

With reference to the guidance detailed within Section 2.0, Table 3.1 presents the specific methodology adopted for the assessment of noise arising from the development proposals.

Table 3.1
Assessed Sources of Environmental Noise

Potential Noise Source	Relevant Assessment Methodology
Industrial Noise Commercial Noise	BS 4142:2014+A1:2019

3.2 Selection of Assessment Criteria

The following criteria have been selected to determine the threshold of effect levels in the context of Planning Guidance (Wales) and Technical Advice Note (Wales). The guidance detailed within BS 4142:2014+A1:2019 presents the industry standard methodology for the assessment of noise impacts from both industrial & commercial sources. Whilst TAN 11:1997 refers specifically to guidance found in BS 4142:1990, it can be assumed that any later revision should subsequently be used. Therefore, the defined "rating level" categories found within BS 4142:2014+A1:2019 are presented in Table 3.2 and stipulate the level of noise which can be permitted.

Table 3.2
Assessment Criteria: BS 4142:2014+A1:2019

Noise Exposure Category	Criteria	Justification
A	Free-field external noise levels at adjacent sensitive receptor locations below representative background noise level	Noise levels below the background are considered that no adverse noise impacts will occur in the context of BS 4142
B	Free-field external noise levels at adjacent sensitive receptor locations within +5 dB of representative background noise level	Noise levels within + 5 dB of the representative background noise levels are considered that an adverse noise to occur in the context of BS 4142
C	Free-field external noise levels at receptor above +5 dB of representative background noise level	None- Mitigate to achieve category A or B
D	Free-field external noise levels at receptor above +10 dB of representative background noise level	None- Mitigate to achieve category A or B

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4.0 ENVIRONMENTAL NOISE SURVEY

4.1 Survey Methodology

Daytime and night-time measurements were undertaken at two (2no.) measurement locations from the 6th to the 11th of August 2026. The noise measurements established typical external ambient and background noise levels at the site. The measurement locations are hereby referred to in this report as follows:

- 'Location 1' – sound level meter positioned approximately 1.5m from the ground, eastern boundary of the proposed site; and
- 'Location 2' – sound level meter positioned approximately 1.5m from the ground, south corner of the proposed site.

The equipment used during the survey is detailed in Appendix B. The sound level meters were calibrated before and after the measurements and no significant calibration drifts were found to have occurred (>0.2dB). The noise monitoring equipment had been calibrated to a traceable standard within the twenty-four months preceding the survey. Calibration certificates are available on request.

The measurement locations are shown in Appendix C.

4.2 Survey Results

The weather during the surveys was suitable for noise measurements, with it being dry with low wind speeds. Summaries of the measured noise levels are given in Tables 4.1 - 4.2. A full dataset can be provided on request.

Table 4.1
Summary of Measured Noise Levels (Location 1) – 06/08/26 to 11/08/26 – Free Field, dB

Date	Period	Time (h)	$L_{Aeq,T}$	L_{A10}	L_{A90}	L_{AFMax}
06/08/2026	Daytime	1230h - 2300h	54.9	54.5	35.5	85.1
06/08/2026 - 07/08/2026	Night-time	2300h - 0700h	44.0	35.0	27.3	74.4
07/08/2026	Daytime	0700h - 2300h	54.1	53.5	34.7	91.6
07/08/2026 - 08/08/2026	Night-time	2300h - 0700h	47.9	36.7	28.1	89.7
08/85/2026	Daytime	0700h - 2300h	56.8	52.2	33.6	98.2
08/08/2026 - 09/08/2026	Night-time	2300h - 0700h	44.2	36.0	26.5	74.1
09/08/2026	Daytime	0700h - 2300h	52.6	49.4	35.6	93.6
09/08/2026 - 10/08/2026	Night-time	2300h - 0700h	44.1	37.6	28.6	77.4
10/08/2026	Daytime	0700h - 2300h	53.9	53.0	34.6	87.1
10/08/2026 - 11/08/2026	Night-time	2300h - 0700h	44.2	34.9	28.0	76.2
11/08/2026	Daytime	0700h - 1215h	53.1	52.9	33.2	80.9

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Table 4.2
Summary of Measured Noise Levels (Location 2) – 06/08/26 to 11/08/26 – Free Field, dB

Date	Period	Time (h)	$L_{Aeq,T}$	L_{A10}	L_{A90}	L_{AFMax}
06/08/2026	Daytime	1300h - 2300h	49.2	44.9	36.4	82.9
06/08/2026 - 07/08/2026	Night-time	2300h - 0700h	38.3	36.0	29.1	74.9
07/08/2026	Daytime	0700h - 2300h	44.4	44.2	36.7	78.8
07/08/2026 - 08/08/2026	Night-time	2300h - 0700h	38.8	37.7	31.5	53.3
08/85/2026	Daytime	0700h - 2300h	44.5	44.1	37.2	81.3
08/08/2026 - 09/08/2026	Night-time	2300h - 0700h	36.4	36.1	28.7	73.0
09/08/2026	Daytime	0700h - 2300h	44.8	43.8	37.0	79.2
09/08/2026 - 10/08/2026	Night-time	2300h - 0700h	40.3	36.6	28.8	76.1
10/08/2026	Daytime	0700h - 2300h	45.5	43.7	35.5	85.0
10/08/2026 - 11/08/2026	Night-time	2300h - 0700h	38.9	35.9	30.1	74.0
11/08/2026	Daytime	0700h - 1145h	44.1	44.4	37.2	75.5

4.2.1 Observations and Comments

The noise environment at the measurement locations during the attended portion of the survey was dominated by distant road traffic, birdsong and small scale on-site operational noise such as the owner weeding. Noise from the existing automotive garage situated northwest was also influencing the noise levels during the daytime.

For the assessment, it is considered that the levels measured are representative of the typical acoustic environment at the survey locations.

4.2.2 BS 4142:2014+A1:2019 Background (L_{A90}) Statistical Analysis

In accordance with the methodology detailed in Section 8 of BS 4142:2014+A1:2019, representative background noise levels have been determined through statistical analysis of all 15-minute samples and are expressed as integers (with 0.5 dB being rounded up).

The results of the statistical analysis of measured background noise levels during the operational daytime period are presented in a graphical format in Figures 4.1 to 4.2 overleaf. The record highlighted in teal denotes the representative background levels used within this assessment.

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Figure 4.1
'Location 1' – Daytime Background Noise Level – ($L_{A90,15min}$) Analysis

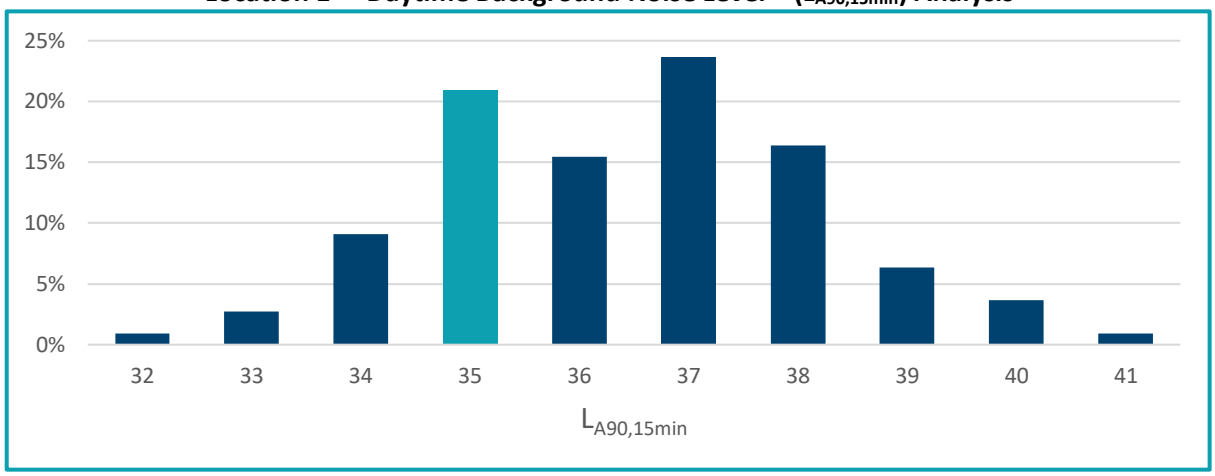
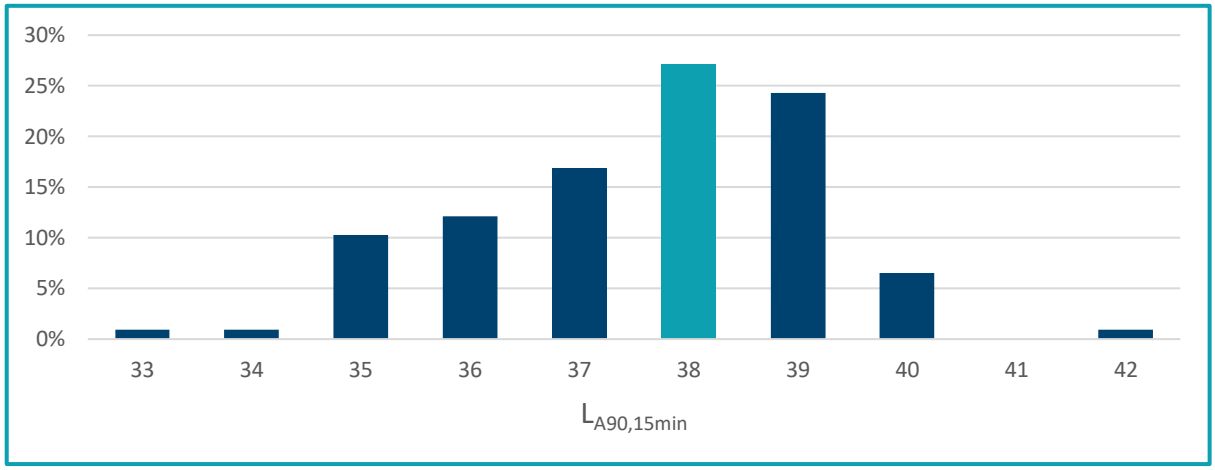


Figure 4.2
'Location 2' – Daytime Background Noise Level – ($L_{A90,15min}$) Analysis



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5.0 NOISE MODELLING METHODOLOGY

5.1 Data Sources

Modelling calculations have been undertaken based on the spatial settings and data sources identified in Table 5.1.

Table 5.1
Noise Model Input Data

Parameter	Scenario	Data Source	Assumptions
Site Plans	Existing	*OS Mastermap Data*	Existing building heights modelled as 8.5m AGL (typical 2-storey building height) unless otherwise stated through global mapping software
	Proposed (Site Layout)	*Proposed Block Plan Drawing no. 81008/GH/003*	None
	Proposed (Elevations)	*Existing Elevations Drawing no. 81008/GH/101*	
Ground Heights	All	Environment Agency Open Data LiDAR Digital Terrain Model (2.0m resolution)	None
Ground Absorption	All	*n/a*	Hard ground conditions on and off site (G=0.0)
Reflections	All	*n/a*	3rd order reflections have been accounted for within the noise model

5.2 Source Noise Assumptions

5.2.1 Existing Permitted Use - Bus Depot and Workshop

Workshop Noise Levels

The existing permitted use of Central Garage is for a bus depot/workshop which can accommodate up to 8 vehicles on site at any given time.

While the permitted use of the site remains valid, there are currently no ongoing operations on the site relating to this use. In order to ensure a robust reflection of what the noise levels would be under the current permitted use, a general noise level has been taken from an engineering workshop, where noise sources included grinding, welding and metal cutting, the data of which was collected from another project completed by Dragonfly Consulting. It has been assumed that during maintenance operations on buses, the two large vehicle doors on the southern façade will be open for the duration works, to assess a worst-case scenario. Source noise level data utilised in the assessment of ambient noise (L_{Aeq}) contributions are presented in the Table 5.2.

Table 5.2
Workshop Internal Sound Power Level

Noise Source	Octave Band Sound Power Level (L_w), Hz (dB(Z))								Sum
	63	125	250	500	1000	2000	4000	8000	dB(A)
Maintenance Workshop	63.9	70.4	73.9	78.4	82.3	87.9	86.2	75.5	***92.0***

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Table 5.3 presents a summary of the operational assumptions accounted for within the noise model to determine ambient noise contributions at adjacent sensitive receptor locations.

Table 5.3
Operational Assumptions (Bus Maintenance Workshop)

Noise Source	Source Type	Operational Assumptions
Maintenance Workshop	Vertical Area Source	Assumed 25% on-time throughout 1hr daytime

Bus Parking Noise Levels

Noise emissions from bus parking have been modelled in accordance with *'BayLfU Parking Area Noise'.* Only daytime events have been considered due to the site not being operational during the night-time.

Table 5.4
BayLfU Modelling Input Data – Bus Parking

Parameter	Input
Emissions Calculation	LfU-Study-2007
No. Parking Spaces	6 Bus Parking Spaces*
Events per space (1hr – Day)	0.5 (per space)

*There are 8 parking spaces on the site, however to present a worst-case assessment it has been assumed that both workshop bays will be in operation. As a result, the 6 parking spaces and the two buses in the workshop make the permitted 8 vehicles on site.

5.2.2 Proposed Use - Car Repair Workshop

As part of the proposals, the site is looking to have a newly installed screw compressor which will be the main noise generating source internally to the workshop. Source noise levels of a compressor have previously been monitored by Dragonfly Consulting and the source noise level data has been reproduced in Table 5.5 and utilised within the assessment of ambient noise (L_{Aeq}) contributions.

Table 5.5
Compressor Sound Power Level

Noise Source	Octave Band Sound Power Level (L_w), Hz (dB(Z))								Sum
	63	125	250	500	1000	2000	4000	8000	dB(A)
DeWalt Compressor	74.0	76.2	82.3	87.5	77.9	76.3	70.5	61.8	***86.0***

Table 5.6 presents a summary of the operational assumptions accounted for within the noise model to determine ambient noise contributions at adjacent sensitive receptor locations.

Table 5.6
Operational Assumptions (Maintenance Workshop - DeWalt Compressor)

Noise Source	Source Type	Operational Assumptions
DeWalt Compressor Breakout	Vertical Area Source	Assumed 16% on-time throughout 1hr daytime (Assumed 10 minute use per hour)

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Noise emissions from car parking have been modelled in accordance with *'BayLfU Parking Area Noise'.* Only daytime events have been considered due to the site not being operational during the night-time.

Table 5.7
BayLfU Modelling Input Data – Car Parking

Parameter	Input
Emissions Calculation	LfU-Study-2007
No. Parking Spaces	6 Car Parking Spaces*
Events per space (1hr – Day)	0.5 (per space)

*There are 8 parking spaces on the site however, to present a worst-case assessment it has been assumed that both workshop bays will be in operation. As a result, the 6 parking spaces and the two buses in the workshop make the permitted 8 vehicles on site.

5.2.3 Sound Reduction Indices

To account for the sound reduction provided by the building envelope, the various materials used throughout the existing structure have been modelled within Insul. Each building material has been informed with site observations and typical assumptions to provide a realistic yet worst-case scenario for the assessment The sound reduction indices used within the CadnaA modelling have been reproduced in Table 5.8.

Table 5.8
Sound Reduction Spectrum (R_w)

Reference	Octave Band Sound Reduction (R), Hz								Sum
	63	125	250	500	1000	2000	4000	8000	R_w
140mm Concrete Block	39	42	39	46	53	59	64	-	51
Roller Shutter Door (10mm Steel Sheet)	29	33	38	42	39	42	50	-	42
Entrance/Exit Door	23	27	30	27	30	37	46	-	32
Double Glazing (4mm/12mm/4mm)	-	21	17	25	35	37	31	-	29
Cladding (Kingspan KS1000RW)*	12	15	19	23	24	22	32	-	24

*Assumed for both panelled parts of the wall structure as well as the roof structure.

5.3 Uncertainty

5.3.1 Survey

Given the duration of the survey and the use of the highest measured daytime and night-time noise levels to ascertain noise propagation across the site, it is considered that the limits of Class 1 sound level meters are the only limiting factor when considering survey uncertainty.

Standard equipment uncertainties have been considered by applying allowable tolerances minus the maximum allowable test laboratory uncertainties given in IEC 61672-1, as defined by Narang and Bell (*Narang, P. and Bell, T., 2008. New IEC standards and periodic testing of sound level meters. Proceedings of the Internoise, Shanghai, China, pp.26-29*).

The following table provides an overview of standard equipment uncertainties relevant to the SLM class utilised within the survey.

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Table 5.9
Standard uncertainties using allowable tolerances minus test laboratory tolerances given in IEC 61672-1 (source: Narang and Bell, Table 14)

SLM Class	Frequency Weighting	Directional Response	Level Linearity	Toneburst Response	Calibrator (IEC 61672)	Supply Voltage	Combined Standard Uncertainty +/- dB
Class 1	0.5	0.5	0.4	0.25	0.125	0.05	0.9

5.3.2 Modelling

CadnaA noise modelling software has been utilised to ascertain how noise propagates throughout the proposed development. The software directly incorporates the ISO 9613 calculation procedure which has an uncertainty rating of +/- 3dB.

5.3.3 Combined Uncertainty

Based on the information provided above, the combined Root Sum Squared (RSS) uncertainty for the assessment has been calculated as +/- 3.1dB.

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6.0 ASSESSMENT

6.1 Permitted Bus Depot and Workshop Use - BS 4142 Assessment

The assessment of ambient noise contributions (L_{Aeq}) from the permitted use of the site as a bus depot and workshop has been undertaken following the guidance within BS 4142:2014+A1:2019 and the operational assumptions based on the consented activities.

As the operational noise characteristics of the permitted use are consented activities, no correction has been applied to determine the rating level ($L_{Ar'Tr}$) in accordance with BS 4142:2014+A1:2019. As referenced within Section 1.1.2, the proposed operating hours of the business will be Monday to Saturday from 0800h-1700h and so the permitted use has been assessed to the same parameters. The representative monitoring position and background noise levels for each NSR have been included within Table 6.1 during the 0800h - 1700h period.

Table 6.1
Representative Monitoring Locations & Operational Background Noise Levels

NSR	Representative Monitoring Location	Background Noise Level, dB Operational Period (0800h-1700h)
1	Loc 1	35
2		
3	Loc 2	38
4	Loc 1	35

The results of the assessment are shown in Table 6.2. In accordance with BS 4142:2014+A1:2019 Paragraph 8.6, the background levels are expressed as integers (with 0.5 dB being rounded up):

Table 6.2
BS 4142 Assessment of Vehicle Repair Noise Impact Daytime, $L_{Ar'Tr}$ dB

NSR	Existing Measured Background (L_{A90}) Operational Period (0800h-1700h)	Predicted Rating Level ($L_{Ar'Tr}$) Operational Period (0800h-1700h)	Difference, dB Operational Period (0800h-1700h)
1	35	62.4	+27.4
2	35	60.3	+25.3
3	38	65.3	+27.3
4	35	63.3	+28.3

As shown in Table 6.2, noise contributions from the permitted bus depot and workshop, with both the vehicle doors open, will be up to 28.3dB above the background noise levels during the operational hours. When considering this exceedance against the TAN guidance, this falls within Noise Exposure Category D and would require mitigation if being submit as a new proposal. While not currently ongoing, the permitted use could begin at any point and be considered acceptable in terms of planning approval.

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6.2 Proposed Vehicle Repair Noise - BS 4142 Assessment

The assessment of ambient noise contributions (L_{Aeq}) from the proposed vehicle repair premises has been undertaken following the guidance within BS 4142:2014+A1:2019 and operational assumptions detailed in in Section 5.2.

As the operational noise characteristics of the vehicle repair premises are not dissimilar from the consented activities allowed for the existing bus depot usage, no correction has been applied to determine the rating level ($L_{Ar'Tr}$) in accordance with BS 4142:2014+A1:2019 as activities and noise produced on site will be no different under the new proposals. As referenced within Section 1.1.2, the proposed operating hours of the business will be Monday to Saturday from 0800h-1700h. To provide a robust assessment and provide greater flexibility for use by the client, it has been assumed that the site will operate with both vehicle doors open.

The results of the assessment are shown in Table 6.3. In accordance with BS 4142:2014+A1:2019 Paragraph 8.6, the background levels are expressed as integers (with 0.5 dB being rounded up):

Table 6.3
BS 4142 Assessment of Vehicle Repair Noise Impact Daytime, $L_{Ar'Tr}$ dB

NSR	Existing Measured Background (L_{A90}) Operational Period (0800h-1700h)	Predicted Rating Level ($L_{Ar'Tr}$) Operational Period (0800h-1700h)	Difference, dB Operational Period (0800h-1700h)
1	35	51.5	+16.5
2	35	53.0	+18.0
3	38	56.4	+18.4
4	35	57.0	+22.0

As shown in Table 6.3, noise contributions from the proposed vehicle workshop with both the vehicle doors open will be up to 22dB above the background noise levels during the operational hours. When considering this exceedance against the TAN guidance, this falls within Noise Exposure Category D and would require mitigation. However, as the measured levels were monitored during a period of no operational noise from the site as the permitted use is not currently ongoing, this is an extremely worst-case assessment. While not currently ongoing, the permitted use could begin at any point and be considered acceptable in terms of planning approval. A comparison between the likely noise from activities relating to a bus depot and the proposed vehicle repair workshop have been included below.

6.3 Permitted Use vs Proposed Use

Noise output from the existing permitted use has been modelled within CadnaA based on the noise input data referenced within Section 5.2.1 which is of a development of a similar nature. This allows us to obtain a representative noise level of the permitted activities at each NSR to use within the assessment. Both breakout from the operations of a bus maintenance depot and bus parking has been considered as part of the permitted activities. Table 6.4 shows the noise levels of the proposed development in comparison to the noise levels permitted.

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Table 6.4
Comparison Assessment of Permitted Use Against Proposed Use

NSR	Modelled Permitted Use	Modelled Proposed Use	Difference, dB
1	62.4	51.5	-10.9
2	60.3	53.0	-7.3
3	65.3	56.4	-8.9
4	63.3	57.0	-6.3

As shown in Table 6.4, when comparing the noise impact of the permitted bus workshop use against the proposed vehicle repair workshop use, the noise levels experienced at the nearest NSRs is predicted to result in a change of at least -6.3dB with the proposals. Even though the predicted level from the proposed development at the NSRs is significantly above the SOAEL and falls within Category D under the TAN guidance as shown in Table 6.2, as the existing noise impact from the existing permitted use at Central Garage is also already above the SOAEL and higher than the proposed use. The noise impact at the nearest NSRs would be lower with Central Garage operating under the newly proposed development plans as opposed to the permitted, consented use on the site beginning operations again in its current state.

6.4 Assertion of Competence

This assessment has been completed by Travis Smith, Acoustic Consultant with responsibilities for completing acoustic reports on behalf of Dragonfly Consulting. I hold a Bachelor of Science in Geography from the University of Hull. I have experience of undertaking acoustic consultancy work since July 2022 and I am an Associate Member (AMIOA) of the IOA.

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7.0 CONCLUSIONS

Roger Parry and Partners have appointed Dragonfly Consulting to carry out a Noise Impact Assessment for a change of use from a bus depot to B1/B2 premises repairing cars, located at King Street, Acrefair, Wrexham.

The noise assessment has been conducted with reference to the Planning Guidance (Wales): Planning Policy, TAN11:1997 and the appropriate British Standards and recognised guidance and reference documents relevant to this site.

This report describes a noise survey of the site and the subsequent analysis to determine the noise environment of the proposed development. It then compares the results with the adopted criteria and, where applicable, recommendations are made with respect to the design of the development.

The proposed vehicle repair noise when assessed against the current non-operational background noise levels is predicted to give rise to an increase of up to 22dB. It is therefore considered that the predicted noise impact from the proposed vehicle repair noise will fall within noise exposure category D as seen in Table 3.2. However, this does not factor in the site has an existing permitted use where operations could resume at any point. Utilising a modelled scenario based on the existing permitted use and comparing this to the noise output from the proposed vehicle repair shop use, the noise associated with the proposed development is expected to be at least 6.5dB lower at the nearest NSRs than the existing permitted use and therefore should be considered acceptable.

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Appendix A – Glossary of Terminology

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided.

The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0dB (the threshold of hearing) to over 120dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A-1
Sound Levels Commonly Found in the Environment

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

Acoustic Terminology

dB (decibel) The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure ($2x10^{-5}$Pa).

dB(A) A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

L_{Aeq} This is defined as the notional steady sound level which, over a stated period of time, would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.

L_{10} & L_{90} If a non-steady noise is to be described, it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. L_{10} is the level exceeded for 10% of the time and is often used as a descriptor for road traffic noise. Similarly, L_{90} is the level exceeded for 90% of the time and is often used to describe the background level. It is common practice to use the L_{10} index to describe traffic noise.

L_{AMax} This is the maximum A-weighted sound pressure level recorded over the period stated. L_{AMax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment.

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Appendix B – Monitoring Equipment

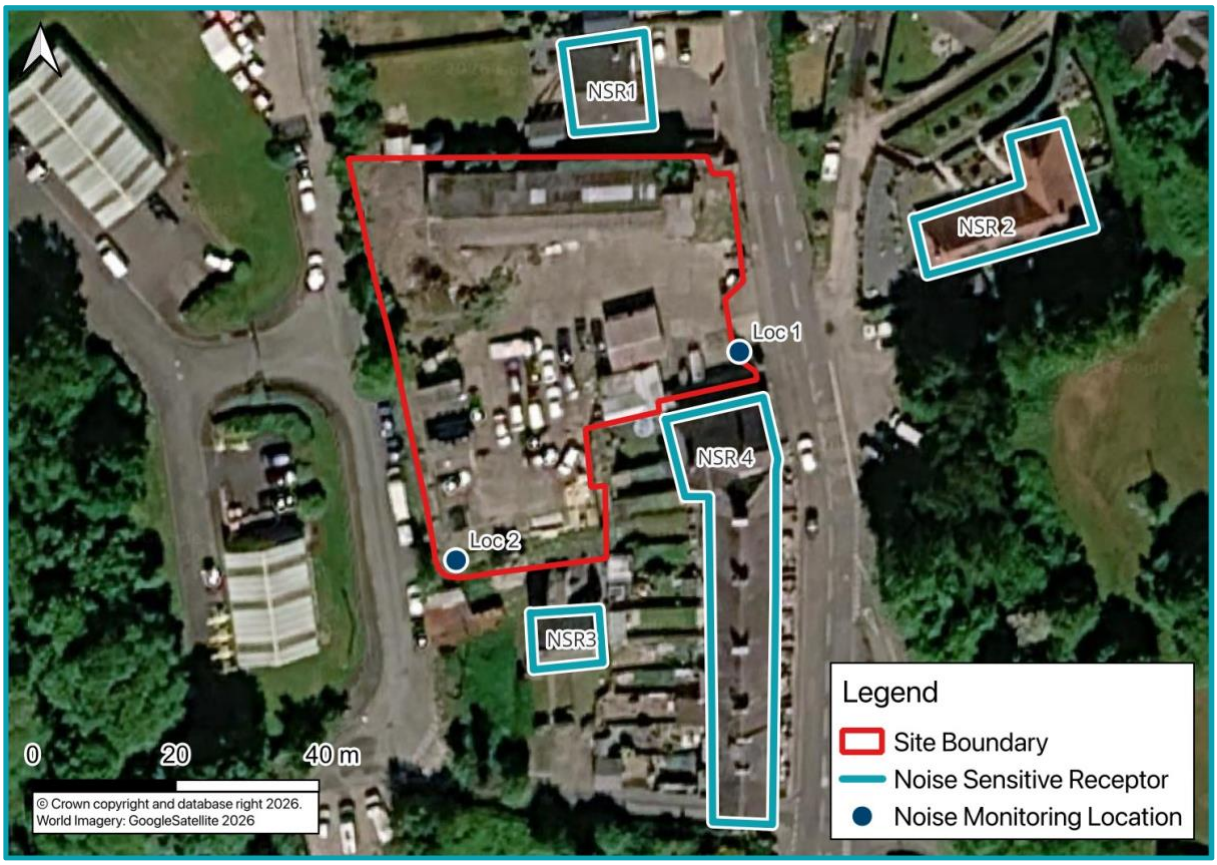
Table B-1
Noise Monitoring Equipment

Equipment	Serial Number
01dB Cube Sound Level Meter	10892
G.R.A.S 40CD Microphone	233511
01dB PRE22N Preamplifier	11071
01dB Fusion Sound Level Meter	12298
G.R.A.S 40CD Microphone	332011
01dB PRE22N Preamplifier	1936193
Cirrus CR:515 Acoustic Calibrator	98862

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Appendix C – Noise Sensitive Receptor & Measurement Locations

Figure C-1
Sensitive Receptor & Measurement Locations



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