

NOISE IMPACT ASSESSMENT

BS 4142:2014+A1:2019

Proposed Beer Garden

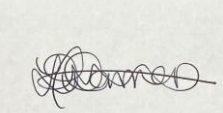


NOISE
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YOUR LOCAL ACOUSTIC SPECIALIST

REPORT DETAILS

Report Title	Noise Assessment: Proposed Beer Garden
Site Address	Afan Ales and Fine Wines, 24 Station Road, Port Talbot, SA13 1JB
Project No.	NALPRO230424.01
Consultant Contact	jonathan@noiseassessments.co.uk

QUALITY ASSURANCE

Issue No.	Status	Issue Date	Comments	Author	Approved
1	FINAL	03/05/24	-		
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Assessment Summary

A ground-floor unit (herein referred to as the site) is currently applying for proposed on the premises to confirm that the impact from patrons (approx. 60 patrons) at the rear of the site complies with external noise guidance during the daytime/evening.

Proposed beer garden will be closed by 22:00.

No kitchen extraction is included in the premises.

The local council want to understand noise levels from the proposed outdoor noise from patrons talking. The client has been requested by the Local Council to complete a noise assessment at Afan Ales and Fine Wines, 24 Station Road, Port Talbot, SA13 1JB.

BS4142:2014 is the prescribed standard for assessing fixed plant sources of industrial and commercial noise on residential receptors for the UK. It is noted the assessment omits usage for music and entertainment noise sources, however, the method of referencing noise emissions to the background noise climate is deemed a useful tool for the assessment.

According to BS4142:2014, the following 'Low Impact' target should be achieved. It is useful to consider the exceedance of the background noise level in relation to the lower frequency bands, 63Hz and 125Hz, due to the prominent low frequency content within recorded music.

Unattended noise measurements were undertaken throughout the day on Sunday 28th April 2024.

The lowest daytime/evening background sound level at the side was measured between 20:00-20:15 as 39 dB LA90,15min.

External Breakout Noise

The dominant noise source on-site is expected to be raised voices of patrons.

Expected external noise level has been derived based on measured noise levels and textbook data. The following spectral data for human voice c is tabulated below:

Frequency, HZ	63	125	250	500	1k	2k	4k	dB LAeq
Patron voices	68	61	63	66	60	55	50	66

With reductions afforded by a proposed boundary wall to the rear boundary and partly covered areas, distance attenuated noise level to the facades at NSR1 is calculated as 59 dB LAeq and NSR2 51 dB LAeq. See Appendix E for full calculation details.

As the building (NSR1) is owned by the applicant, they proposed to improve the glazing and ventilation (RW+Ctr 32 10/12/6mm, trickle ventilation) to the bedroom windows nearest the proposed beer garden to reduce the noise impact.

1. Proposal

- 1.1 A ground-floor unit (herein referred to as the site) is currently applying for proposed on the premises to confirm that the impact from patrons (approx. 60 patrons) at the rear of the site complies with external noise guidance during the daytime/evening.
- 1.2 Proposed beer garden will be closed by 22:00.
- 1.3 No kitchen extraction is included in the premises.
- 1.4 The local council want to understand noise levels from the proposed outdoor noise from patrons talking. The client has been requested by the Local Council to complete a noise assessment at Afan Ales and Fine Wines, 24 Station Road, Port Talbot, SA13 1JB.

2. Existing Context

- 2.1 The site (two storey) is an attached brick-built property adjacent to shops/restaurants along a main road with extraction flue/commercial car garage and residential apartments and detached dwellings at the rear of the site.
- 2.2 The environmental health department of the local planning authority raised concerns of noise emissions from patrons on neighbouring noise sensitive residential properties during the daytime at the rear of the site.

3. Criteria

- 3.1 The following targets have been selected in accordance with 'BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound.' This will be achieved when the Rating Level is below the representative background sound level.
- 3.2 Whilst there are no prescribed standards for the assessment of noise impact where human voice is the primary source, reference can be made to 'BS8233:2014 – Guidance on sound insulation and noise reduction for buildings' [British Standards Institution] which gives guideline criteria for internal ambient noise levels in residential dwellings.

4. Noise Policy and Guidance

Planning Policy Wales

- 4.1 Planning Policy Wales (PPW) is the current planning policy guidance within Wales. The planning guidance defines the primary objective of the document in paragraph 1.2 as follows:

‘...to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales...’

- 4.2 In particular reference to noise Paragraph 6.7.3 of the PPW states:

‘Problematic forms of sound are generally experienced as noise pollution and can affect amenity and be prejudicial to health or a nuisance. Noise action plans drawn up by public bodies aim to prevent and reduce noise levels where necessary and preserve soundscape quality where it is good. Noise levels used to identify priority areas contained in noise actions plans are usually set quite high in order to focus resources on the most polluted areas and noise must meet a number of tests before it qualifies as a statutory nuisance. Lower levels of noise, however, can still be annoying or disruptive and impact on amenity.’

Technical Guidance

BS8233:2014 – Guidance on sound insulation and noise reduction for buildings

- 4.3 The following targets have been selected in accordance with ‘BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound.’ This will be achieved when the Rating Level is below the representative background sound level.

5. Nearest Sensitive Receptor Locations

- 5.1 The nearest noise sensitive receptors (NSRs) have been identified as a residential apartment on the first floor adjacent to the front of the site (NSR1) (5m) and (NSR2) 23m.

6. Subjective Impressions

- 6.1 The noise climate at the rear of the site is dominated by people chatting nearby, bird song. Secondary noise sources have been identified as commercial noise from a nearby extraction flue and commercial car garage.

7. Measurement Locations

- 7.1 Unattended background noise measurements were undertaken outside the rear of the nearest sensitive receptor. The data collected during this period has been used to characterise the existing acoustic environment around the site and specific noise from patrons.
- 7.2 Measurement and NSR locations are shown in figure 1 below:

Figure 1: Site & Measurement Location



- Background measurement location M1
- Site location
- ★ NSR1 ★ NSR2

8. Measurement Procedure

- 8.1 Noise levels were measured on 25th to 27th January 2024. Full measurement times and durations can be found in **Appendix B**.

9. Measurement Equipment

- 9.1 Measurements were undertaken using a calibrated, Pulsar N45 class 1 sound level meter. Full equipment details can be found in **Appendix C**.
- 9.2 Measurements at the monitoring location was 'free field' (no vertical reflective surfaces within 3.5 metres of the microphone) and at a height of between 1.2 – 1.5 metres above ground level. During all measurements the microphone was protected with an outdoor windshield.
- 9.3 The calibration level of the meter was checked before and after the survey with a sound calibrator with no variation in the levels observed.

9.4 The sound level meters were set to measure various noise parameters including LAeq and LAmax values using a 'fast' time weighting.

9.5 Full calibration details can be provided upon request.

10. Weather Conditions

10.1 Weather conditions were deemed acceptable for background noise measurement. Full meteorological conditions are detailed in **Appendix E**.

11. Background Sound Level

11.1 Environmental noise levels were measured on site on Sunday 28th April 2024.

11.2 The lowest daytime background sound level was measured between 20:00-20:15 as 39 dB LA90,15min.

12. External Noise Level

12.1 The dominant noise source on-site is expected to be raised voices of patrons.

12.2 Expected internal noise level has been derived based on measured noise levels and textbook data. The following spectral data for human voice and music is tabulated below:

Frequency, HZ	63	125	250	500	1k	2k	4k	dB LAeq
Patron voices	68	61	63	66	60	55	50	66

12.3 With reductions afforded by a proposed boundary wall to the rear boundary and partly covered areas, distance attenuated noise level to the facades at NSR1 is calculated as 59 dB LAeq and NSR2 51 dB LAeq. See Appendix E for full calculation details.

12.4 As the building (NSR1) is owned by the applicant, they proposed to improve the glazing and ventilation (RW+Ctr 32 10/12/6mm, trickle ventilation) to the bedroom windows nearest the proposed beer garden to reduce the noise impact.

13. Noise Management

13.1 To keep noise in the community as low as practical, several noise reduction measures will be discussed and enforced with patrons at the site.

- Be mindful of nearby residents when patrons leave the site.

- Signage outside to be mindful of residents nearby.
- Ensure staff are aware of any increase in noise and take appropriate action.

14. Summary

- 14.1 A ground-floor unit (herein referred to as the site) is currently applying for proposed on the premises to confirm that the impact from patrons (approx. 60 patrons) at the rear of the site complies with external noise guidance during the daytime/evening.
- 14.2 Proposed beer garden will be closed by 22:00.
- 14.3 No kitchen extraction is included in the premises.
- 14.4 The local council want to understand noise levels from the proposed outdoor noise from patrons talking. The client has been requested by the Local Council to complete a noise assessment at Afan Ales and Fine Wines, 24 Station Road, Port Talbot, SA13 1JB.
- 14.5 BS4142:2014 is the prescribed standard for assessing fixed plant sources of industrial and commercial noise on residential receptors for the UK. It is noted the assessment omits usage for music and entertainment noise sources, however, the method of referencing noise emissions to the background noise climate is deemed a useful tool for the assessment.
- 14.6 According to BS4142:2014, the following 'Low Impact' target should be achieved. It is useful to consider the exceedance of the background noise level in relation to the lower frequency bands, 63Hz and 125Hz, due to the prominent low frequency content within recorded music.
- 14.7 Unattended noise measurements were undertaken throughout the day on Sunday 28th April 2024.
- 14.8 The lowest daytime/evening background sound level at the side was measured between 20:00-20:15 as 39 dB LA90,15min.

External Breakout Noise

- 14.9 The dominant noise source on-site is expected to be raised voices of patrons.
- 14.10 Expected external noise level has been derived based on measured noise levels and textbook data. The following spectral data for human voice c is tabulated below:

Frequency, HZ	63	125	250	500	1k	2k	4k	dB LAeq
Patron voices	68	61	63	66	60	55	50	66

- 14.11 With reductions afforded by a proposed boundary wall to the rear boundary and partly covered areas, distance attenuated noise level to the facades at NSR1 is calculated as 59 dB LAeq and NSR2 51 dB LAeq. See Appendix E for full calculation details.
- 14.12 As the building (NSR1) is owned by the applicant, they proposed to improve the glazing and ventilation (RW+Ctr 32 10/12/6mm, trickle ventilation) to the bedroom windows nearest the proposed beer garden to reduce the noise impact.

Appendices

APPENDIX A - Measurement Details				
Measurement	Start Date	Start Time	End Date	End Time
M1	28/04/24	10:00	28/4/24	22:00

APPENDIX B - Equipment Details				
Equipment	Make	Model	Class	Serial Number
Sound Meter	Pulsar	N45	1	1365
Calibrator	Pulsar	PM1	1	011121C

APPENDIX C - Calibration Details					
Measurement	Calibrator Ref Level (dB)	Level Before (dB)	Deviation Before (dB)	Level After (dB)	Deviation After (dB)
M1	94.0	94.0	0	94.0	0

APPENDIX D - Meteorology Details						
Date	Temp C	Wind Speed m/s*	Wind Direction	Humidity %	Precipitation mm	Cloud Cover (Oktas)
28/04/24	18	2.9	ssw	84	0.0	5/8

*Windspeeds measured on site using a Skywatch Xplorer 2 Anemo-Thermometer.

APPENDIX E – Noise Breakout

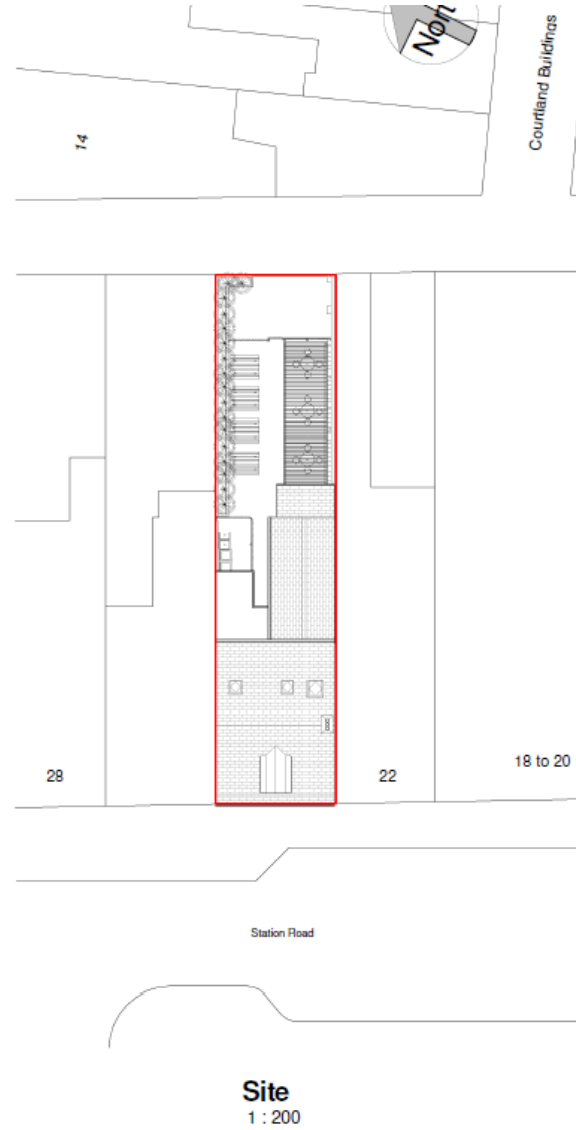
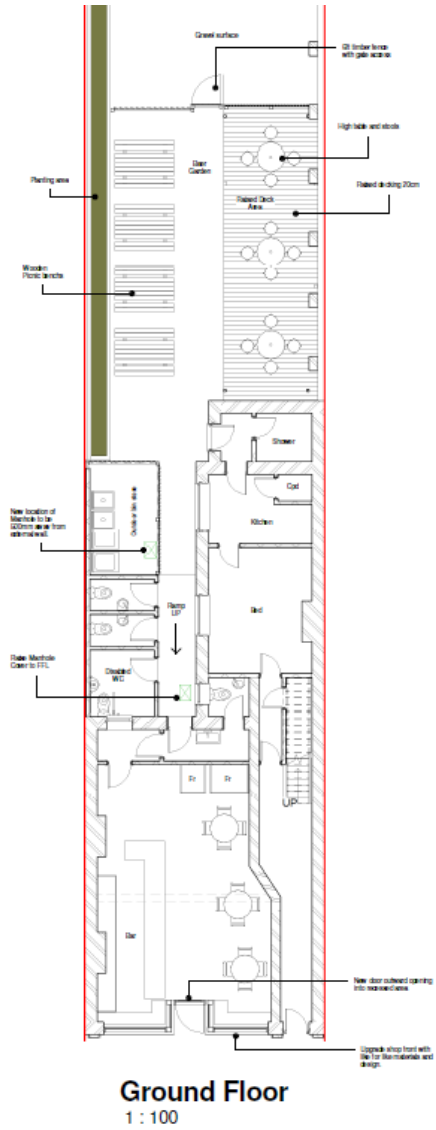
Breakout

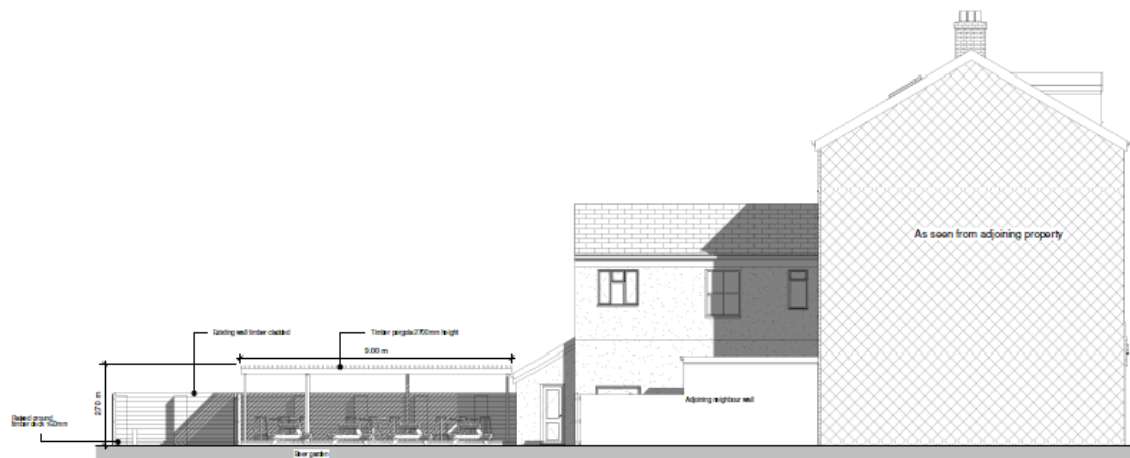
Frequency, Hz	63	125	250	500	1000	2000	4000
Source, dB Leq Lz	68.0	61.0	63.0	66.0	60.0	55.0	50.0
Breakout, dB Leq	58.0	51.0	53.0	56.0	50.0	45.0	40.0
A-Weighting, dB	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0
Breakout, dB LAeq	31.8	34.9	44.4	52.8	50.0	46.2	41.0

Breakout Sum, dB LAeq	50.7
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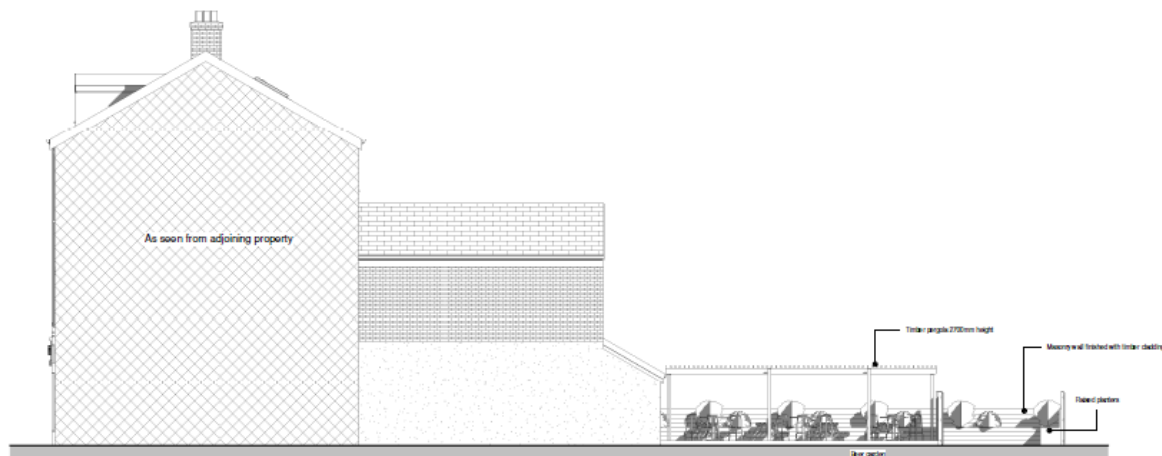
Source - Receiver, m	11
Noise Source, dB Leq	66

APPENDIX F – Layout Drawings





Left Elevation
1 : 100



Right Elevation
1 : 100

Do not scale from this drawing, any dimensions shown are indicative only and are subject to verification onsite. The contractor is to set out, check and co-ordinate all dimensions on site during the course of the works, this drawing is to be read in conjunction with all other plans, structural calculations and specifications.

All works to be carried out in accordance with the latest appropriate codes of practice and to comply with current building regulation. Prior to commencement of the building works the contractor should:

1. Ensure that all drawings are approved for use by the planning department and (if applicable) by building control.
2. Inform the building control department that works have commenced onsite.
3. Verify the boundary lines and ground conditions, including checking of all the services (gas, water, electric, telecom and sewers) prior to any excavation work.
4. Request a copy of the party wall award where works affect a party wall or involve excavation within 3m of adjoining buildings.
5. Where the works include demolition to ensure that all elements of the building and adjoining structures are accounted for and that all necessary propping and temporary works are in place.
6. Works carried out under a building notice or prior to the approval of the drawings all works are at the contractors own risk.
7. Any discrepancies either between the written dimension and the site dimensions or between the drawing and other consultants' suppliers drawings should be brought to the attention of the client.

No.	Description	Date

CODE	SUITABILITY DESCRIPTION
STATUS	PURPOSE OF ISSUE



PROJECT
24 Station Road, Port Talbot

TITLE
Proposed Side Elevations

CLIENT
Afan Ales & Fine Wines

DRAWN BY CCS	CHECKED BY Client	DATE 25/02/2024
SCALE (@A3) 1 : 100	PROJECT NUMBER 26022024	REV
DRAWING NUMBER A205		





APPENDIX G – Terminology and Definitions

Noise

Sound only becomes noise (often defined as ‘unwanted sound’ or sound that is considered undesirable or disruptive) when it causes or contributes to some harmful or otherwise unwanted effect, like annoyance or sleep disturbance.

Acoustic Environment

Sound from all sound sources as modified by the environment.

Equivalent continuous A-weighted sound pressure level $L_{Aeq,T}$

Value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval T , has the same mean square sound pressure as a sound under consideration whose level varies with time.

A-weighting

The human ear is most sensitive to frequencies in the range 1 kHz to 5 kHz. On each side of this range the sensitivity falls off. A-weighting is used in sound level meters to replicate this sensitivity and respond in the same way as the human ear.

Octave Band

Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.

Maximum Sound Pressure Level $L_{Amax,T}$

Highest value of the A-weighted sound pressure level with a specified time weighting that occurs during a given event or measuring period.

The $L_{A10,T}$ Sound Level

The A-weighted sound pressure that is exceeded for 10% of a given time interval, T . It is often used to evaluate road traffic noise.

The $L_{A90,T}$ Sound Level

The A-weighted sound pressure that is exceeded for 90% of a given time interval, T , measured using time weighting F . It is often referred to as the background noise level and which might in part be an indication of relative quietness at a given location

Free-field Level

The sound pressure level away from reflecting surfaces.

NOTE Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the

measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

Façade Level

The sound pressure level 1 m in front of the façade.

NOTE Facade level measurements of LpA are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.

Indoor Ambient Noise

Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants.

ABOUT US

HERE TO HELP

We undertake various noise assessments and noise survey for a wide range of clients to meet their noise requirements and obligations, including for Planning Applications, new developments, building extensions, change of use, small businesses, restaurants, shops and much more.

QUALIFIED AND EXPERIENCED

Over 15 years UK and international acoustic engineering experience of undertaking Noise Monitoring, acoustic solutions, noise survey and Reporting.

Members of the Institute of Acoustics. Undertaken projects in Manchester, North West and across the UK.

GET THE PROJECT DONE

We offer competitive, cost effective acoustic solutions, delivering a noise survey report which complies with Local Planning Authority requirements and sound insulation or health and safety obligations.

We can also undertake Noise Modelling if required.