

Feasibility Assessment of Proposed Noise Management of Unit 9 Gym including use of limiter

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Prepared for: Mr Tavis Knoyle

Site address: Unit 9 Gym
Quay Road
Neath
SA11 1SL

Acoustics & Noise Limited

55 Malpas Road, Newport, South Wales, NP20 5PJ

TEL: +44(0)1633-850880

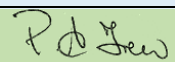
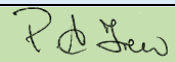
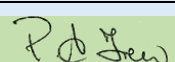
FAX: +44(0)1633-850882

www.acousticsandnoise.co.uk

office@acousticsandnoise.co.uk



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Signature					
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Signature					
Authorised by	Paul Trew				
Signature					

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BRIEF FOR CONSULTANCY

This report has been prepared by Acoustics & Noise Limited, Newport, South Wales, for Unit 9 Gym under the instruction of Mr T Knoyle.

Order No: n/a

OBJECTIVES

To provide a further interim assessment of the noise management strategy, including the use of a limiter, to allow the control of music levels as agreed with Neath Port Talbot CBC.

NON-TECHNICAL SUMMARY

Unit 9 Gym plays music as part of the normal activities of the business. This has resulted in complaints from Brickyard Cottages.

As reported in an earlier assessment, acceptable internal music levels were agreed with Ms Megan Thomas by adjusting the level of the amplification that resulted in acceptable levels at the complainants.

Subsequently Neath Port Talbot requested a more robust control methodology which was agreed with Ms Leah Morgan as follows:

1. Carry out a noise survey at the agreed measurement point at the curtilage of the complainant's property to establish the baseline noise levels without the Gym sound system operating.
2. Survey to take place on a Saturday morning 06.00 hrs with suitable weather conditions (as per BS4142) to validate the results.
3. Adjust the Gym sound system to an acceptable level for operation of the Gym and check the sound level at the complainants.
4. If the operational level is not measurable record the internal level at a specified internal measurement point.

5. If measurable set the sound system to a level that is not measurable and record this level as the operational level to be used as the control point for an electronic limiter.
6. Specify electronic limiter to be fitted to the existing sound system (by others) to enable control of the internal sound levels to the control point. Limiter to be capable of being sealed to prevent tampering.
7. Prepare and submit factual and interpretive report for submission.

This report describes the inclusion of the agreed limiter to the system to provide additional assurance that the completion of Points 1-7 is achievable.

Due to unacceptable conditions, inclement weather, a survey to objectively confirm the noise levels at the complainants was not possible. However, as agreed with Ms Megan Thomas, the limiter was adjusted to control the maximum music level to previously agreed internal levels.

It is anticipated that an objective survey and any final adjustments will take place in conjunction with Neath PTBC when suitable weather conditions are available.

The assessment confirms that the sound system can be operated at a suitable level for the patrons of the Gym whilst not causing adverse comment at the complainants and that a tamperproof electronic limiter can be used to control the amplified sound to that level.

1.0 DESCRIPTION OF SITE

- 1.1 The Gym is in a mainly industrial and commercial trading estate. As such the building is a typically industrial construction of profiled metal sheeting with a 2m concrete block curtain wall.
- 1.2 The bulk of the sheeting has been overclad with insulation and plasterboard.
- 1.3 It is not economically or practically viable to add further insulation to the building envelope as the roof is very unlikely to be able to support any further significant loading.

2.0 DISCUSSION

- 2.1 As it is not possible to significantly improve the sound reduction properties of the building envelope the recommended Noise Management Strategy is to be based on controlling the internal music levels with the use of an electronic limiter.
- 2.2 A Formula Sound AVC2D limiter was fitted to the system on 11/02/2022. Technical details of this limiter were emailed to Ms M Thomas and Ms L Morgan on 28/01/2022. (07967) 179825
- 2.3 As agreed with Ms Megan Thomas, and confirmed by email 10/02/2022 the initial sound levels were set as follows and subsequently used for this assessment to set the maximum internal music noise levels achievable with the limiter operational.
- 2.4 The agreed amplifier settings were forwarded by Ms Thomas by email on 16th August 2021 as follows:
"The levels on the sound system for the two speakers were as follows:
Classes:
6am Levels 4 & 5
7am Levels 4 & 5
9am Levels 4 & 6
6pm Levels 4 & 6
Daytime (no classes) Levels 4 & 4".
- 2.5 These amplifier settings were used to establish the internal music levels as per our earlier report 210609R01

- 2.6 The measured sound levels from report 210609R01 are shown below:

	Measured sound level $L_{Aeq,1min}$		
	Near Speaker cluster	Far Speaker cluster	Centre of Counter
6am Levels 4 & 5	77	74	69
7am Levels 4 & 5	77	74	69
9am Levels 4 & 6	77	89	80
6pm Levels 4 & 6	77	89	80
Daytime (no classes) Levels 4 & 4	76	76	69

- 2.7 The limiter was adjusted so that the maximum sound levels possible were replicated as per the table above.
- 2.8 **Note** that the amplifiers are to be always set at maximum and that the mixer control can only be used to reduce the level if required. It is not possible to increase the sound above the set level as per the table above.

3.0 RECOMMENDATIONS

- 3.1 Following the granting of a conditional planning consent carry out points 3 to 7 in the agreed methodology.
- 3.2 Seal Limiter with a tamperproof cover.

P.A.T. 11/02/22
M.Sc., I.Eng., M.I.O.A.,
M.Inst.SCE., M.A.E.S.

Appendix 1 Range of Typical Noise Levels

A1.0 RANGE OF TYPICAL NOISE LEVELS

Figure 1 – Range of Typical Noise Levels

