

# Comments on the application for a premises licence (LAD003-1) at Holford Hall, Plumley Cheshire.

---

Dr Paul Kendrick

[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

20<sup>th</sup> August 2015

Certain residents, living near to the premises for which the application is being made, have concerns regarding the possibility of noise from this new licence application which may cause a nuisance, and they have asked me for my comments on this case. The following views are mine alone and do not represent any organisation I am associated with. I hold an MSc and a PhD in Acoustics. The following documentation highlights the appropriate policy points and provides precedence in the form of reports on noise made by an Acoustic consultancy for a similar licence application, and presents a short guide on how some basic calculations of the noise level at nearby dwellings would be carried out.

## Introduction

1. The licence application specifies that recorded and live music will be provided, both within the orangery and within an external marquee(s).
2. Referring to the Cheshire East Council Statement of Licensing Policy (Licensing Act 2003) The policy dated January 2014 to January 2019 (Cheshire East Council 2014); one of the council's duties is 'The prevention of public nuisance' (Section 2.5) and the following statements are taken from Section 9 within the document:
  - a. "Consideration will be given to whether the operating schedule contains **adequate measures to prevent noise** and vibration, generated from within the premises, outside it, or from an open site, that may **cause disturbance**." (Section 9.4)
  - b. The document further notes "Applicants will be expected to have included measures in their Operating Schedules that make adequate provision to:" (Section 9.5)
    - i. "Restrict the generation of any noise within the premises and from activities associated with the premises in the vicinity, or from an open air site"
    - ii. "Limit the escape of any noise from the premises or open air site"
    - iii. "Restrict any noise emissions to below levels that could affect people in the vicinity going about their business, at work and when at home both while relaxing and while sleeping"
    - iv. "Minimise and control any noise from customers arriving and departing from the premises"



3. Within the licence application for Holford Hall there is no mention of **adequate measures to prevent noise**.
4. The only way to address this issue is to first **establish** if there is a possibility that noise from the proposed application may **cause disturbance** and to then **ensure** that there are **adequate measures to prevent noise** in the form of mitigating equipment or procedures (such as, for instance, additional sound insulation or the fitting of a sound limiting device to ensure levels do not exceed a prescribed amount). From the documentation I have seen this licence application does not fulfil these requirements.
5. Of particular concern is the mention of music, both recorded and live, to be provided outside in a marquee. The thin skin that makes up a marquee offers limited reduction in sound and, particularly in summer when there may be the tendency to leave the door open (if there is no provision of air conditioning), there will be very little reduction in sound level especially at low frequencies, which are particular to drums and bass instruments .
6. The only way to establish if there is a possibility of causing a disturbance is to employ an acoustic consultant(s) to perform measurements and simulations in order to establish the sound pressure level that can be expected at the residents' houses. Based on these results the consultant(s) could either recommend mitigation procedures or note that the disturbance would be unavoidable.

### **Precedence – disturbance from music in a marquee at a wedding venue**

The following reports from Waveney District Council describe the result of a similar investigation where an application was made by the Ivy House Hotel, Oulton Broad for variation of the existing licence to permit the use of a marquee within the grounds of the hotel for live and recorded music, dancing and the supply of alcohol every day from 1100 hours to 0200.

Reports from two consultancies are available from the Waveney District Council website:

- Sharps Redmore Acoustics consultancy report - (King 2014)
- Adrian James Acoustics Limited (Andrew Oldridge MIOA 2014)

The marquee was located within 300m of a place of residence and the conclusion of the report was that "has the potential may [sic] cause a public nuisance to neighbouring residential properties in contravention of the policy aims contained within the Waveney DC Statement of Licensing Policy" (King 2014)

### **Calculations**

The following represents some calculations to estimate the possible levels that may occur at the nearest residence to Holford Hall should the licence be approved. The results of the calculations have large uncertainties associated with them and only through a proper survey will realistic values be gleamed. This following section is only to demonstrate what procedure the consultant(s) may follow, and the result at the end is only guesstimate of the possible levels at the nearest dwelling.

- The first task would be to establish the possible problem locations and to perform a noise survey of the area to establish the background noise levels.
- The noise survey would involve recording the sound pressure levels at the property(s) usually at night time, to establish the background noise levels. This will usually be done by placing a sound level meter at the location and computing an index known to represent the background noise level known as the  $L_{90}$ . ( $L_{90}$  is the level exceeded for 90 percent of the time, it is often used to quantify the background noise level)
- The next step would be to either make measurements if the noise is already active or if the issue concerns a proposal (as in this case) to design a model to predict the levels of noise that may occur at the problem locations. The steps to carry this out involve:
  1. Establish the sound level within the marquee; the following details approximate the levels of reverberant sound within a barn for a typical rock/pop function band) (Rees 2014). Each level represents the average sound level on the dancefloor, in a particular octave band. Then using the a-weighting correction from (Bies & Hansen 2009), a single measurement of the noise level can be expressed as the "equivalent continuous A-weighted level",  $LA_{eq}$ .

Octave band (Hz)	63	125	250	500	1000	2000	4000	8000	$LA_{eq}$
Sound pressure level (dB)	97	96	91	90	90	75	70	65	93 dBA

Table 1. Typical sound levels during a live music event.

2. Use an appropriate model to predict the level of sound at the receiver locations. The simplest method of modelling this propagation is described in British Standard 4142:2014 (Standard 2014) and involves computing the attenuation of the sound due to:
  - Geometrical spreading
  - Air absorption
  - Attenuation due to barriers (marquee walls)
  - Attenuation due to vegetation
  - Attenuation due to ground effects
  - Attenuation due to meteorological effects

Figure 1 shows a map (Google Maps) of the proposed venue and the nearby dwellings, the distance to the nearest dwelling is 580m, although the exact location of the marquee is unknown so a nominal 600m is used in the calculations.



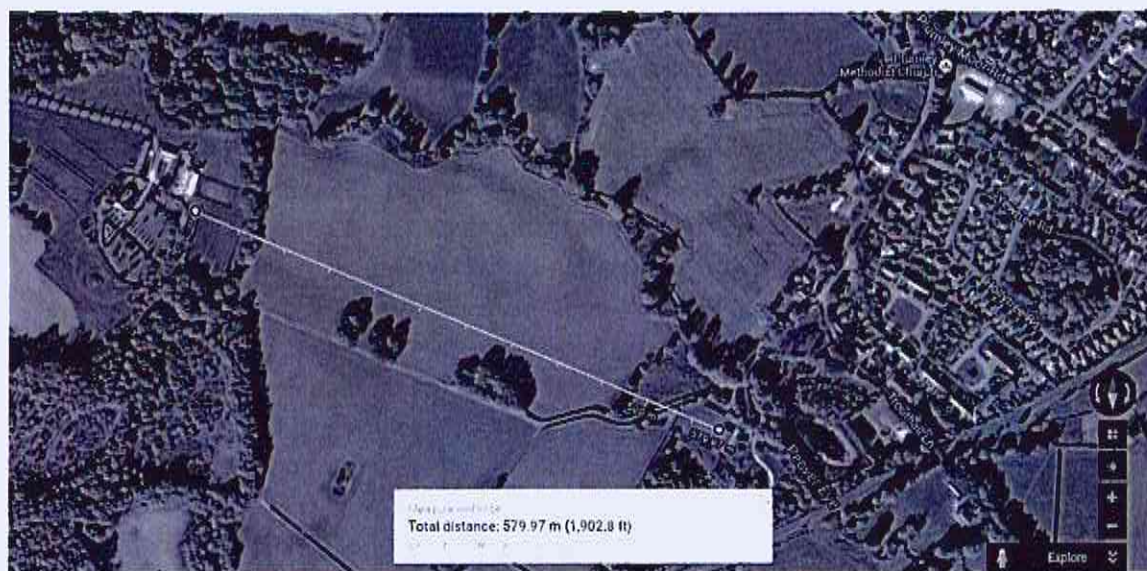


Figure 1 Map of area, showing nearest dwelling (approximate)

The hemispherical spreading is computed using equation 5.151 in (Bies & Hansen 2009), and the air absorption using the approximate solution in (Anon n.d.) (assuming 90% humidity), the attenuation due to the marquee walls is taken from (Andrew Oldridge MIOA 2014) (although (King 2014) claims this is a significant over estimation). There does not appear to be any significant barrier(s) or foliage in the path. The simple method of (Bies & Hansen 2009) for ground effects is adopted; which is, no effect for soft ground and +3dB for hard surfaces. As there does not appear to be any hard surface(s) in the path this is neglected. Meteorological effects are neglected due to lack of data. These calculations are presented in Table 2.

	63.0 (dB)	125.0 (dB)	250.0 (dB)	500.0 (dB)	1000.0 (dB)	2000.0 (dB)	4000.0 (dB)	8000.0 (dB)	Total (dBA)
Hemispherical spreading	-63.5	-63.5	-63.5	-63.5	-63.5	-63.5	-63.5	-63.5	
Air absorption	0.0	0.0	0.0	-0.1	-0.5	-2.0	-7.9	-31.6	
Barriers / housing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Attenuation due to marquee	-4.3	-4.3	-6.4	-8.5	-8.3	-13.7	-17.3	-22.3	
Attenuation due to foliage	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Attenuation/Amplification due to ground effects	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Attenuation due to meteorological effects	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total attenuation	-67.8	-67.9	-70.0	-72.2	-72.3	-79.2	-88.7	-117.4	
Level at residence (Leq)	37.1	36.1	29.0	25.8	25.6	3.8	-10.8	-44.4	29

Table 2. Computation of Sound Levels (Leq) at dwelling

Table 2 shows the sound pressure level (expressed in LAeq) at the closest dwelling is around 29 dBA. This value is subject to large uncertainties due to the unknown parameters of the situation. However the next step would be to establish if this sound level would be likely to cause a nuisance. To achieve this Sharps Redmore (King 2014) suggested following the Institute of Acoustics (IOA) Draft Code of Practice on the Control of Noise from Pubs and Clubs' which suggested that the "LAeq (music playing) should not exceed the background LA90 (music off)". "In addition the L10 (level



exceeded for 10% of time) of low frequency 'bass' noise (40 – 120 Hz) should not exceed the background noise level with music off."

## Summary

Measurements need to be made at the possible problem dwelling(s) to establish if the noise from the proposed licensed venue will exceed the background noise levels near Plumley. (Andrew Oldridge MIOA 2014) reported that the background noise levels (LA90) varied between around 25 to 30 dBA between the hours of 23:00 and 00:00; from 00:00 to 01:00 the levels decreased to between 19 and 28 dBA in the vicinity of the Ivy House Hotel which is near to the Lowestoft urban agglomeration. Plumley is more rural suggesting that the background noise levels could be lower. This indicates that if the 'guesstimate' of 29dBA was accurate, this is similar to and possibly louder than the background noise levels near Lowestoft. If the noise levels are similar or lower in Plumley, there may be a noise nuisance. In conclusion an independent acoustic survey is required to establish if there is a possibility that noise from the proposed application may **cause disturbance**.

## References

- Andrew Oldridge MIOA, 2014. *Ivy House Hotel, Oulton Broad, Noise assessment for proposed Marquee*, Available at: [http://www.waveney.gov.uk/egov\\_downloads/Item\\_5\\_-\\_Additional\\_Report\\_-\\_Technical\\_Report.pdf](http://www.waveney.gov.uk/egov_downloads/Item_5_-_Additional_Report_-_Technical_Report.pdf).
- Anon, ISO 9613-2 Acoustics -- Attenuation of sound during propagation outdoors -- Part 2 General method of calculation.pdf.
- Bies, D. & Hansen, C., 2009. *Engineering noise control: theory and practice*, Available at: [http://books.google.com/books?hl=en&lr=&id=v98PaeB8nQkC&oi=fnd&pg=PP1&dq=Engineering+noise+Control+Theory+and+Practice&ots=4n3a3o-W17&sig=e\\_3FsJFQRLdhQ0E3zgJFh4MrZyl](http://books.google.com/books?hl=en&lr=&id=v98PaeB8nQkC&oi=fnd&pg=PP1&dq=Engineering+noise+Control+Theory+and+Practice&ots=4n3a3o-W17&sig=e_3FsJFQRLdhQ0E3zgJFh4MrZyl) [Accessed August 20, 2015].
- Cheshire East Council, 2014. Cheshire East Council Statement of Licensing Policy (Licensing Act 2003) Policy dated January 2014 to January 2019. , (January), pp.1–41.
- King, G., 2014. *Report Ivy House Hotel, Oulton Broad, Lowestoft - Hearing Statement for Licensing Application*, Available at: [http://www.waveney.gov.uk/egov\\_downloads/Item\\_5\\_-\\_Additional\\_Report\\_-\\_Acoustic\\_Information.pdf](http://www.waveney.gov.uk/egov_downloads/Item_5_-_Additional_Report_-_Acoustic_Information.pdf).
- Rees, I., 2014. *The Octagon, Little Plumstead, Music noise assessment*, Available at: [http://www.broadland.gov.uk/MVM.DMS/Planning Application/663000/663639/20140305 Noise Impact Assessment.pdf](http://www.broadland.gov.uk/MVM.DMS/Planning%20Application/663000/663639/20140305%20Noise%20Impact%20Assessment.pdf).
- Standard, B., 2014. *BS 4142:2014 Methods for rating and assessing industrial and commercial sound*,