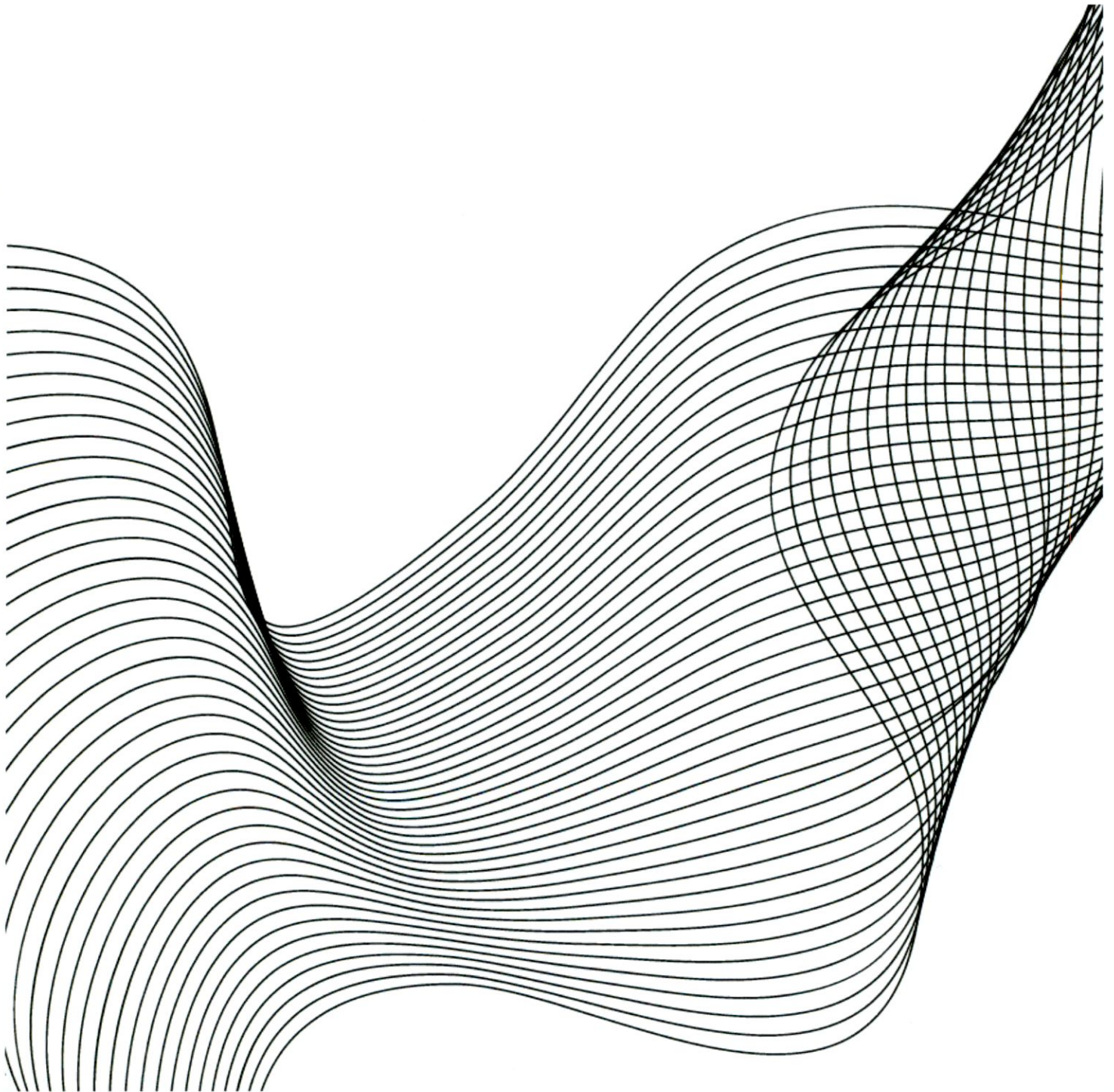




J. Taylor Architect Ltd.

Salmon Leap Inn – Noise Assessment

Issued





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1.0 Introduction

Enfonic have been commissioned to prepare a noise impact assessment for a planning application on behalf of the Salmon Leap pub. The noise impact assessment will be based on information previously requested by South Dublin County Council listed below:

'An Acoustic assessment must be undertaken by a suitably qualified acoustic consultant describing and assessing the impact of noise emissions from the proposed use. The investigation must include, but not necessary [sic] limited to, the following:

- (a) The identification of any neighbouring noise sensitive receivers who may be potentially impacted by the proposal*
- (b) The identification of all operations conducted onsite as part of the development proposal that are likely to give rise to a public nuisance for the neighbouring noise sensitive receivers. This must include consideration for customer noise in this area combined with the potential use of the function room i.e. worst case scenario*
- (c) An assessment of the existing background ($L_{A90,15min}$) and ambient ($L_{Aeq,15min}$) acoustics environment at the receiver locations representative of the time periods that noise impact may occur*
- (d) Distances between the development and the nearest noise sensitive receiver and the predicted level of noise ($L_{A90,15min}$) impact from the proposed development when assessed at the boundary of the receiver.*
- (e) Confirmation is required as to whether music is proposed in the outdoor seating area*
- (f) A statement outlining any recommended acoustic control measures that should be incorporated into the development to ensure the use will not create adverse noise impacts on the occupiers of any neighbouring noise sensitive properties*

2.0 Site Description

The site location is the Salmon Leap Inn, Dublin Road, Leixlip, Co. Dublin, W23 PD34. Figure 1 illustrates the site location in the context of the surrounding environment.



Figure 1. Site location.

This report will present details of the noise assessment and mitigation measures recommended to ensure target noise limit is achieved.

3.0 Applicable Guidance

3.1 BS 8233:2014

Having considered the site situation and operation it is appropriate to use the guidance set out in *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings* in order to assess the noise impact of the premises. This standard sets noise criteria aimed at preventing sleep disturbance and is adopted by many local authorities for planning purposes.

The recommended levels for indoor ambient noise in residential dwellings are summarised in Table 1.

Table 1. BS 8233:2014 Recommended internal noise limits.

Activity	Location	07:00 – 23:00 hours	23:00 – 07:00 hours
Resting	Living room	L _{Aeq,16hr} 35dB	-
Dining	Dining room/area	L _{Aeq,16hr} 40dB	-
Sleeping (daytime resting)	Bedroom	L _{Aeq,16hr} 35dB	L _{Aeq,8hr} 30dB L _{AFMax,8hr} 45dB

The above criteria also chime with World Health Organisation (WHO) Environmental noise guidelines for the European Region (2018).

3.1.1 Noise Criteria

For the purposes of this study, it is appropriate to derive external noise criteria based on the internal criteria noted in the paragraph above. This is done by factoring in the degree of noise reduction afforded by a partially open window. This is nominally assumed to be 15dB¹.



Thus, based on the guidance outlined in the BS8233:2014 standard, the following external noise levels would be considered reasonable in order to achieve suitable internal noise levels within the nearest residential properties:

- Daytime (07:00 to 23:00 hours) 55dB $L_{Aeq,1hour}$
- Night (23:00 to 07:00 hours) 45dB $L_{Aeq,1hour}$

3.2 Dublin Agglomeration Environmental Noise Action Plan (2018-2023)

The Noise Pollution of the Dublin Agglomeration Noise Action Plan Volume 4 South Dublin County Council, Section 4.3.3 states the following:

“The Planning Authority will have regard to the Dublin Agglomeration Environmental Noise Action Plan 2013 – 2018 when assessing planning applications along major road and rail transport corridors with a view to reducing noise from new sources and to identify and protect areas of low sound levels.

Development proposals with the potential to give rise to significant noise impacts may require a Noise Impact Assessment and mitigation plan to minimise noise disturbances and protect the amenities of the area.

The Planning Authority will carefully consider the location of noise sensitive developments so as to ensure they are protected from major noise sources where practical. Furthermore, the provision of appropriate mitigation measures for existing areas adjacent to major noise sources is supported and will be considered having regard to the visual amenity and the proper planning and sustainable development of the area.”

Section 6.2.1 sets out proposed targets for desirable low and undesirable high sound levels as follows:

Desirable Low Sound levels:

< 50 dB(A) L_{night}

< 55 dB(A) L_{day}

Undesirable High Sound levels:

> 55 dB(A) L_{night}

> 70 dB(A) L_{day}

It should be noted that appropriate mitigation measures ought to be undertaken if the above criteria are exceeded.

4.0 Assessment

4.1 Noise Sensitive Receptors

The assessment criteria will apply to Noise Sensitive Locations (NSLs), the definition of which is given in the EPA NG4 document as:

“any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or other area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.”

The two closest NSLs are the following residential properties adjacent the R148 road:

1. NSL1 – c150m to the northwest
2. NSL2 – c35m to the northeast

4.2 Noise Source

The primary noise source has been identified as the outdoor area to the rear of the premises. The distance calculations to the NSLs above is taken from the centre of this area.

4.3 Noise Survey

An environmental noise survey has been conducted at the site in order to quantify the prevailing noise environment in the vicinity of the proposed development.

The noise monitoring was conducted between 14:00 13th July 2022 and 04:00 July 2022.

Two Noise Monitoring Locations (NMLs) were selected to represent the closest NSLs to the site. These are given in Table 2.

Table 2. Noise Monitoring Terminals and representative Noise Sensitive Locations

Noise Monitoring Location	Representative of Noise Sensitive Location
NML1	NSL1
NML2	NSL2

The source, monitoring and noise sensitive locations are illustrated in Figure 2 below:

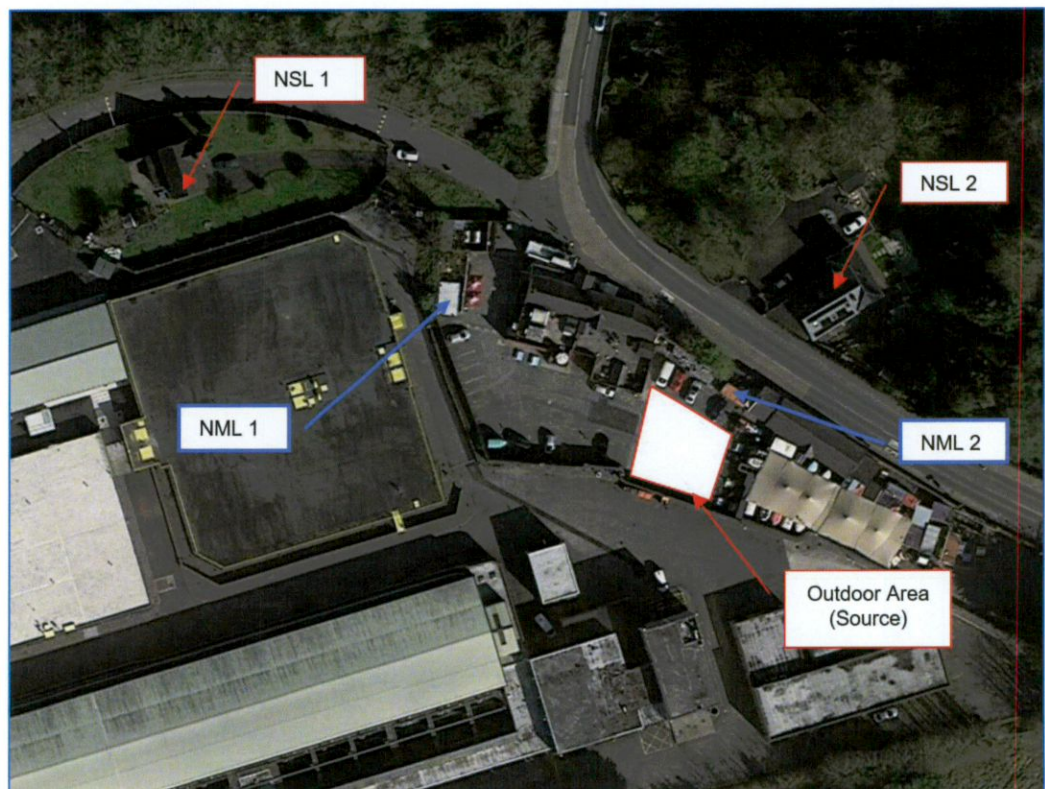


Figure 2. Noise monitoring locations

Measurements were made using Brüel and Kjær Type 2250-L Sound Level Meters. The measurement period was 1 minute and audio recording was enabled to help identify extraneous noise sources.

Before the survey the measurement instrument was calibrated and checked afterwards for any deviation in sensitivity – none was found. Details of the instrumentation used are given in Table 2.



Table 3. Noise monitoring equipment details

Equipment	Model	Serial Number
Sound Level Meter	Brüel & Kjær 2250-L	3008423
		3001456
Calibrator	Brüel & Kjær 4231	3011175

The noise survey results are presented in terms of the following parameters:

L_{Aeq} is the equivalent continuous sound level. It is a type of average and is used to describe a fluctuating noise in terms of a single noise level over the sample period.

L_{A90} is the sound level that is exceeded for 90% of the sample period. It is typically used as a descriptor for background noise.

5.0 Results and Discussion

5.1 Noise Monitoring Results

The results of the noise monitoring at both NMLs are given as a time-history graph in Figure 3 below.

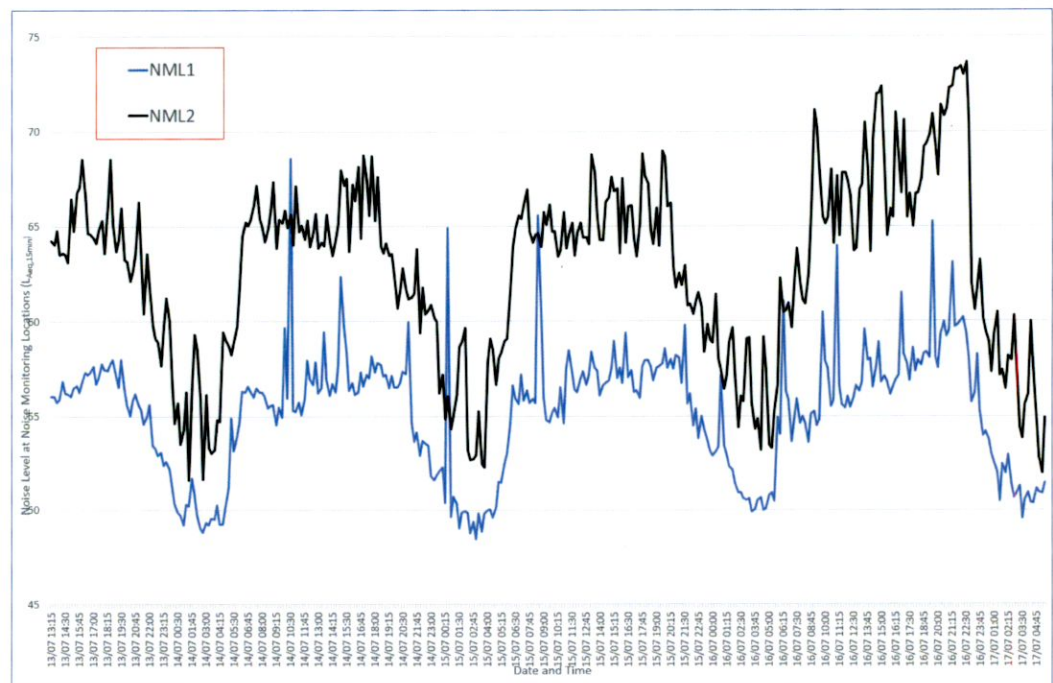


Figure 3. Noise monitoring results at NML1 and NML2.

Figure 3 above shows noise levels in terms of $L_{Aeq,15min}$ parameter. While there is a general day/night diurnal trend, there are also daily fluctuations. In particular, there are a number of “spikes” with measurement from NML1. Site observation revealed that the monitoring location is affected by typical activities at the carpark, e.g., loading and unloading, a car horn, reversing beeper warning sound etc. NML2 is affected by traffic along R148 with subsequent higher noise levels. Noise events at NML2 include a noisy motorcycle and emergency vehicle sirens noises

It is noted that with noise level at NML2, there is a significant rise on 16th July (Saturday). Site observation suggested that music was being played, particularly after 6pm.

Since both NML1 and NML2 are some distance away from the noise sensitive locations, adjustment is necessary before comparing the measured noise levels



with the noise criterion as set out in Section Noise Criteria 3.1.1 Noise Criteria above.

Table 3 below showed the approximate distance and corresponding adjustments from the centre of the outdoor area to the NMLs and NSLs:

Table 3 Estimated adjustment for NML1 and NML2

Distance from Sound Source (m)		Adjustment
NML1	NSL1	
50	100	6 dB
NML2		Adjustment
NML2	NSL2	
11	24	15 dB*

*Includes effect of intervening wall

By introducing the above adjustments, noise levels at the façades of the Noise Sensitive Locations (NSL1 and NSL2) can be predicted and compared with the noise criterion, as set out in Figure 4 below.

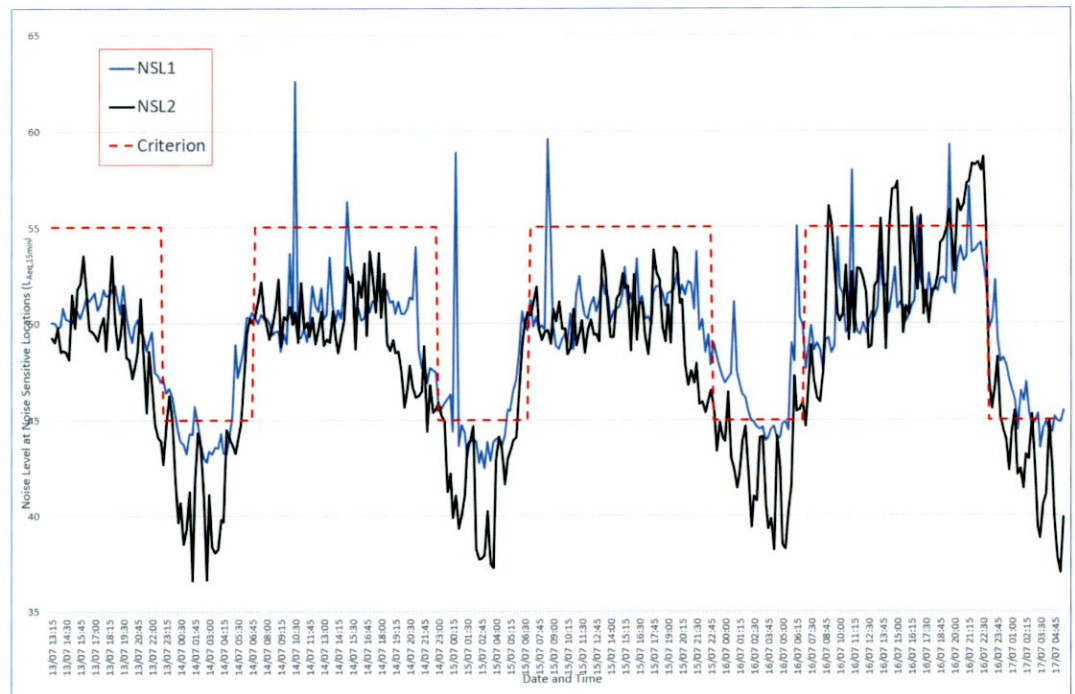


Figure 4. Predicted noise levels at the Noise Sensitive Locations NSL1 and NSL2.

As can be seen, apart from the few “spikes” which not related to the operation of the premises and outside the opening hours, the predicted noise levels at the NSLs were within the noise criterion from 13th to 15th July.

However, predicted noise levels at NSL2 on 16th July were higher than the criterion by approximately 3.4dB. This exceedance was the results of music being played.

The predicted noise levels at the NSLs also satisfy the Desirable Low Sound levels set out in the Dublin Agglomeration Environmental Noise Action Plan.

5.2 Mitigation Measures

The predicted noise level at NSL2 is 3.4dB higher than the criterion. Since music is the major component of the sound source, mitigation measures should be targeted at the music system.



From noise control point of view, the loudspeakers should be reorientated so that they point away from NSL1 and NSL2. This should give sufficient improvement to achieve the criterion. Further improvement can be achieved by reducing the volume of the music system, particularly on Saturdays.

In addition, speaker volume should be maintained so that the noise levels on site do not give rise to exceedance of the criteria (55dBA daytime/45dBA night-time) at the NSLs. This is likely to correlate with an on-site noise level of 70dBA daytime and 60dBA night-time.

6.0 Conclusion

A noise assessment has been conducted for the outdoor space which demonstrates that noise levels at NSL2 are 3.4dB higher than the criterion on Saturday nights (after 23:00) when music was played.

Proposed mitigation measures include reorientating the loudspeakers so that they are pointing away from the NSLs and maintaining the noise level. Further improvement can be achieved by reduce the volume of the music system, particularly on Saturdays. This will give sufficient improvement to ensure the pub operates within noise limits