



**46 – 48 Broadway Market, London  
E8 4QJ  
Noise Impact Assessment**

MONO ACOUSTICS LIMITED

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Report 0821E8			
Issue	Date	Prepared by	
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2 (Revised)	10 August 2021	Umut Yurdakul	AMIOA

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Mono Acoustics Limited established in 2020 and providing noise consultancy services to hospitality and entertainment industry.

Registered in England  
Company No: 12528891

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The recommendations within this report relate to acoustics performance only and will need to be integrated within the overall design by the lead designer to incorporate all other design disciplines such as fire, structural integrity, setting out, etc. Similarly, any sketches appended to this report illustrate acoustic principles only and again will need to be developed into full working drawings by the lead designer to incorporate all other design disciplines.

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## 1.0 INTRODUCTION

The applicant has proposed to add supply of alcohol for consumption on the premises on their premises licence everyday between 09:00 and 23:00. It is understood that the business authorised off sales of alcohol everyday between 07:00 and 02:00 by the current licence.

The local authority has concerns over the possibility of noise nuisance on proposed licensable activity and has requested a noise impact report. The management have therefore commissioned Mono Acoustics to assess noise from proposed activity.

### 1.1 Noise Break-Out Assessment

The purpose of the assessment is to determine the impact of noise from the operation of the venue during operating hours at the nearest noise sensitive receptors. The assessment looks specifically at the worst affected dwellings close to the premises.

Mono Acoustics has visited the site for investigation purposes to carry out an environmental noise survey and establish existing representative background noise levels on 7<sup>th</sup> August 2021.

## 2.0 SITE DESCRIPTION

The premises is located on the east side of Broadway Market, on the ground floor and surrounded by commercial and residential buildings. The nearest residents are located at first floor level, right above the premises.

## 3.0 NOISE CRITERIA

### 3.1 General Noise Criteria

The management of the premises must be made aware of the importance of meeting any noise limits or regulations imposed by the Local Authority, and any conditions stated on the premises licence or planning permission referring to noise.

### 3.2 Design Targets and BS 8233

The guidelines for external noise intrusion into building is described in British Standard BS 8233. The Standard defines internal ambient noise levels in various spaces. For dwellings, indoor ambient noise levels are 35 dB  $L_{Aeq}$  for living room and bedroom, and 40 dB  $L_{Aeq}$  for dining room

between 07:00 and 23:00 hours, and 30 dB  $L_{Aeq}$  for bedroom between 23:00 and 07:00 hours. These levels are including various sources from inside and outside of the building such as mechanical services and traffic. It is generally accepted that the noise attenuation through a slightly open window is of at least 10 dBA.

#### 4.0 MEASUREMENTS

Continuous automated monitoring was undertaken for the duration of the noise survey between 16:27 on 7 August 2021 and 16:30 on 8 August 2021. The measurement position 50 Broadway Market at 1m from resident’s windows shown within Figure 1 below.



Figure 1 – Measurement positions

#### 4.1 Measurement Equipment

The measurement equipment illustrated in Table 1 was used during the survey, all equipment complies with BS EN 61672-1, Class 1 and BS EN 60942, Class 1.

Name	Serial Number	Last Calibrated	Certificate No
NTI XL2 Acoustic Analyser	A2A-17797-E0	29 July 2020	UK-20-038
M2230 Measurement Microphone	8561	29 July 2020	UK-20-038
NTI Precision Calibrator	17147	28 July 2020	44040-17147-CAL200

Table 1 – Measurement equipment

## 4.2 Weather Conditions

Weather conditions throughout the entire background noise survey period were noted to be warm (approx. 19 - 22 degrees Celsius), dry but mostly cloudy (80%) with occasional drizzle during the measurement period, and a light wind (<5metres p/second) from the south. These conditions were maintained throughout most of the survey period and are considered reasonable for undertaking environmental noise measurements.

## 5.0 RESULTS

### 5.1 Background Noise Levels

Figure 2 shows the statistical analysis of the results of 24-hour measurement period in order to determine a representative background sound level. For this distribution of the data an  $L_{A90,15min}$  of 41, 54 and 64 dB were considered were the most commonly occurring values. However, 41 dB has been excluded as the values occurred out of proposed operation hours.

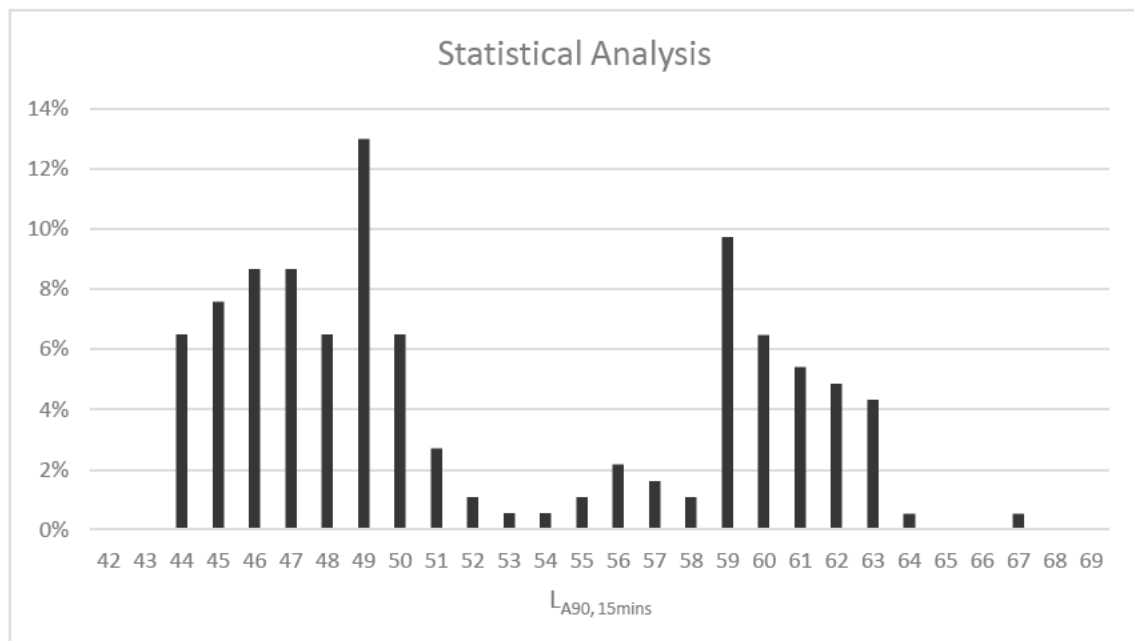


Figure 2 – Background Noise Levels

### 5.2 Calculations for predicted noise at resident’s windows for people talking below

It is estimated total number of 12 people, 3 customers for each table outside, to be served at full capacity. The sound level of a couple talking at moderate conversation level is about 60 dBA at one meter. A simple calculation can be made for predicted noise reaching the residents windows from total number of customers talking in front of the premises. Total noise level of

48 dBA has been predicted with all corrections applied. Calculations are detailed in Appendix B.

## 6.0 NOISE REDUCTION MEASURES

- Keeping number of customers not more than 12 people.
- Acoustic absorbent panelling such as 550mm thick RW3 rockwool should be installed under the tables and chairs to reduce sound being reflected from the ground.
- Notices should be installed reminding customers to respect the neighbours and keep noise down to avoid public nuisance.

## 7.0 CONCLUSION

The owner of the business at 46 -48 Broadway Market has proposed to add supply of alcohol for consumption on the premises on their premises licence. The background and ambient noise levels have been measured over 24 hours at resident's façade.

Calculations have been made to predict potential noise levels at the nearest noise sensitive receptor and showed total noise level of 48 dBA. The predicted level was then compared with the representative background noise levels which has shown 6 dB and 16 dB below daytime and night-time levels, respectively. Furthermore, it is generally accepted that noise reduction from a partially open window is about 10 dBA. This should indicate that external noise to be acceptable.

It has been concluded that potential noise emissions from the proposed activity would not have an adverse impact on the nearest residential receivers if all noise reduction measures in Section 6 are followed.

## APENDIX A

### Glossary of Acoustic terms

- **Decibel, dB:** A unit of logarithmic ratio between a sound pressure and a known reference pressure.
- **dB(A):** A weighted dB. A-weighting is an electronic frequency weighting network which attempts to build the human response to different frequencies into the reading indicated by a sound level meter, so that it will relate to this loudness of the noise.
- **Background sound level,  $L_{A90,t}$ :** A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of given time interval T measured using time weighting F and quoted the nearest whole number of decibels.
- **Ambient sound level,  $L_a = L_{Aeq,T}$ :** Equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually from many sources near and far, at the assessment location over a given time interval, T.



## APPENDIX B

### Calculations

Total sound level for several incoherent sources is given by:

$$L_{TOTAL} = 10 \log \left( 10^{\frac{Lp1}{10}} + 10^{\frac{Lp2}{10}} + 10^{\frac{Lp3}{10}} \dots \dots \dots 10^{\frac{Ln}{10}} \right)$$

In this situation 6 couples are talking at the same time at 60 dBA.

Therefore,

$$L_T = 10 \log \left( 10 * 60^{\frac{60}{10}} \right) = 57 dBA$$

Customers will be at a height of 1.2m from ground when seated. Therefore, predicted level can be adjusted to an equivalent free-field level by adding a 3 dB correction factor. This will indicate 57+3= 60 dBA as a total source noise.

Furthermore, correction for distance to the nearest resident's windows should be applied. 4m distance expected to be attenuated by 12 dB.

$$20 \log(4) = 12$$

Therefore, total sound pressure level at receiver due to activity is 60-12= 48 dBA.

## APPENDIX C

### Pictures

#### Measurement Position



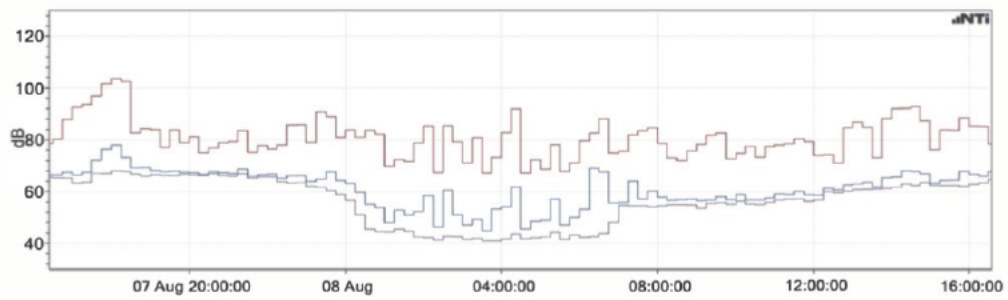
Figure 3 – Fixed measurement point

## APPENDIX D

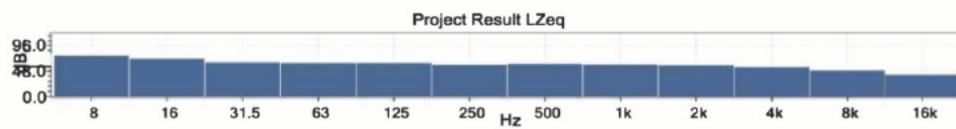
### Measurement data



Start: 2021-08-07 16:26:50  
End: 2021-08-08 16:30:42



— LAFmax\_15' — LAeq\_15' — L90.0 %



### Results

Type	Start	Duration	LAFmax [dB]	LAeq [dB]	L 90.0 % [dB]
<b>Recorded</b>	2021-08-07 16:26:50	1 00:03:52	103.5	65.9	
<b>Project Result</b>		1 00:03:52	103.5	65.9	45.7

### Audit Intervals

Type	Start	Duration	LAFmax [dB]	LAeq [dB]	L 90.0 % [dB]
15'	2021-08-07 16:15:00	00:03:10	78.6	66.5	65.6
15'	2021-08-07 16:30:00	00:15:00	80.3	66.5	65.4
15'	2021-08-07 16:45:00	00:15:00	87.9	67.4	65.2
15'	2021-08-07 17:00:00	00:15:00	92.6	66.4	63.2
15'	2021-08-07 17:15:00	00:15:00	93.6	67.5	63.6
15'	2021-08-07 17:30:00	00:15:00	96.9	72.2	67.0
15'	2021-08-07 17:45:00	00:15:00	101.6	76.4	66.9
15'	2021-08-07 18:00:00	00:15:00	103.5	77.9	68.0
15'	2021-08-07 18:15:00	00:15:00	102.6	73.2	67.8
15'	2021-08-07 18:30:00	00:15:00	82.7	69.1	66.7
15'	2021-08-07 18:45:00	00:15:00	84.3	69.2	66.0
15'	2021-08-07 19:00:00	00:15:00	83.9	68.1	66.5
15'	2021-08-07 19:15:00	00:15:00	77.1	67.6	66.3
15'	2021-08-07 19:30:00	00:15:00	83.8	67.9	66.2
15'	2021-08-07 19:45:00	00:15:00	78.9	67.5	66.7
15'	2021-08-07 20:00:00	00:15:00	81.2	67.3	66.4
15'	2021-08-07 20:15:00	00:15:00	75.0	66.6	66.2
15'	2021-08-07 20:30:00	00:15:00	76.9	67.7	66.9
15'	2021-08-07 20:45:00	00:15:00	78.9	67.3	66.2
15'	2021-08-07 21:00:00	00:15:00	79.4	66.9	66.0
15'	2021-08-07 21:15:00	00:15:00	83.6	68.6	66.8
15'	2021-08-07 21:30:00	00:15:00	75.2	65.9	65.2
15'	2021-08-07 21:45:00	00:15:00	77.8	66.5	65.8
15'	2021-08-07 22:00:00	00:15:00	76.5	66.8	65.8
15'	2021-08-07 22:15:00	00:15:00	78.0	65.1	63.8
15'	2021-08-07 22:30:00	00:15:00	85.7	66.1	63.3
15'	2021-08-07 22:45:00	00:15:00	85.8	66.2	63.5
15'	2021-08-07 23:00:00	00:15:00	79.0	63.9	62.0
15'	2021-08-07 23:15:00	00:15:00	90.8	64.8	61.7
15'	2021-08-07 23:30:00	00:15:00	89.0	67.5	60.4
15'	2021-08-07 23:45:00	00:15:00	80.9	64.2	58.9
15'	2021-08-08 00:00:00	00:15:00	83.8	63.1	56.7
15'	2021-08-08 00:15:00	00:15:00	81.0	59.8	51.0
15'	2021-08-08 00:30:00	00:15:00	83.7	55.1	45.4
15'	2021-08-08 00:45:00	00:15:00	82.2	53.8	44.5
15'	2021-08-08 01:00:00	00:15:00	69.8	48.0	44.4
15'	2021-08-08 01:15:00	00:15:00	72.4	52.9	45.4
15'	2021-08-08 01:30:00	00:15:00	71.6	51.0	44.6
15'	2021-08-08 01:45:00	00:15:00	78.8	52.2	42.4
15'	2021-08-08 02:00:00	00:15:00	85.3	58.5	42.1
15'	2021-08-08 02:15:00	00:15:00	67.4	46.3	41.3
15'	2021-08-08 02:30:00	00:15:00	85.4	60.5	42.7
15'	2021-08-08 02:45:00	00:15:00	79.2	51.1	42.6
15'	2021-08-08 03:00:00	00:15:00	71.1	47.0	41.5
15'	2021-08-08 03:15:00	00:15:00	80.8	49.2	41.8
15'	2021-08-08 03:30:00	00:15:00	67.2	44.8	41.0
15'	2021-08-08 03:45:00	00:15:00	73.2	53.3	41.0
15'	2021-08-08 04:00:00	00:15:00	82.9	54.1	41.6
15'	2021-08-08 04:15:00	00:15:00	92.0	61.8	43.5
15'	2021-08-08 04:30:00	00:15:00	67.2	45.5	41.7
15'	2021-08-08 04:45:00	00:15:00	72.3	48.5	42.0
15'	2021-08-08 05:00:00	00:15:00	68.6	48.9	42.4
15'	2021-08-08 05:15:00	00:15:00	78.1	57.0	44.3
15'	2021-08-08 05:30:00	00:15:00	67.8	47.0	41.5
15'	2021-08-08 05:45:00	00:15:00	71.2	50.0	43.2
15'	2021-08-08 06:00:00	00:15:00	79.7	53.1	42.2
15'	2021-08-08 06:15:00	00:15:00	82.6	69.1	42.6
15'	2021-08-08 06:30:00	00:15:00	88.2	67.6	43.7
15'	2021-08-08 06:45:00	00:15:00	74.9	55.6	48.1
15'	2021-08-08 07:00:00	00:15:00	75.6	55.8	54.6
15'	2021-08-08 07:15:00	00:15:00	81.9	64.0	54.4



15'	2021-08-08 07:30:00	00:15:00	83.6	57.1	54.4
15'	2021-08-08 07:45:00	00:15:00	84.7	60.2	54.1
15'	2021-08-08 08:00:00	00:15:00	78.6	57.8	54.4
15'	2021-08-08 08:15:00	00:15:00	73.0	56.6	54.9
15'	2021-08-08 08:30:00	00:15:00	72.0	56.9	54.9
15'	2021-08-08 08:45:00	00:15:00	75.7	57.1	54.8
15'	2021-08-08 09:00:00	00:15:00	78.3	56.5	53.6
15'	2021-08-08 09:15:00	00:15:00	81.8	56.7	55.4
15'	2021-08-08 09:30:00	00:15:00	82.6	58.0	55.7
15'	2021-08-08 09:45:00	00:15:00	72.7	56.9	55.1
15'	2021-08-08 10:00:00	00:15:00	74.8	58.9	56.3
15'	2021-08-08 10:15:00	00:15:00	77.5	56.8	55.2
15'	2021-08-08 10:30:00	00:15:00	73.3	56.8	55.0
15'	2021-08-08 10:45:00	00:15:00	77.4	57.5	55.8
15'	2021-08-08 11:00:00	00:15:00	78.0	59.1	56.8
15'	2021-08-08 11:15:00	00:15:00	78.5	58.9	57.1
15'	2021-08-08 11:30:00	00:15:00	80.4	60.0	57.2
15'	2021-08-08 11:45:00	00:15:00	79.4	58.8	56.2
15'	2021-08-08 12:00:00	00:15:00	74.1	58.7	56.8
15'	2021-08-08 12:15:00	00:15:00	74.3	61.3	59.9
15'	2021-08-08 12:30:00	00:15:00	71.1	60.7	59.6
15'	2021-08-08 12:45:00	00:15:00	84.8	62.5	60.2
15'	2021-08-08 13:00:00	00:15:00	86.9	62.9	60.8
15'	2021-08-08 13:15:00	00:15:00	84.9	63.5	60.9
15'	2021-08-08 13:30:00	00:15:00	73.1	61.7	61.0
15'	2021-08-08 13:45:00	00:15:00	88.3	65.3	61.3
15'	2021-08-08 14:00:00	00:15:00	92.1	65.7	61.7
15'	2021-08-08 14:15:00	00:15:00	92.2	68.0	62.9
15'	2021-08-08 14:30:00	00:15:00	92.8	67.8	62.3
15'	2021-08-08 14:45:00	00:15:00	87.4	66.8	63.4
15'	2021-08-08 15:00:00	00:15:00	76.2	63.2	62.4
15'	2021-08-08 15:15:00	00:15:00	83.8	64.3	62.3
15'	2021-08-08 15:30:00	00:15:00	83.7	64.4	62.3
15'	2021-08-08 15:45:00	00:15:00	88.5	67.8	62.0
15'	2021-08-08 16:00:00	00:15:00	85.3	66.6	62.8
15'	2021-08-08 16:15:00	00:15:00	85.2	66.0	63.3
15'	2021-08-08 16:30:00	00:00:42	78.4	67.7	64.7

APPENDIX E

Proposed Site Plan

