

TINAPA RESTAURANT & BAR, 853 ASHTON OLD ROAD, MANCHESTER –
NOISE ASSESSMENT FOR RETROSPECTIVE PLANNING APPLICATION

On behalf of:
Tinapa Restaurant & Bar Ltd

**TINAPA RESTAURANT & BAR, 853 ASHTON OLD ROAD, MANCHESTER–
NOISE ASSESSMENT FOR RETROSPECTIVE PLANNING APPLICATION**

Report prepared by:
Hepworth Acoustics Ltd
21 Little Peter Street
Manchester
M15 4PS

On behalf of:
Tinapa Restaurant & Bar Ltd

Report prepared by:
James Shaw BSc AMIOA – Consultant



Report checked by:
Paul Bassett BSc MSc FIOA – Technical Director



CONTENTS

1.0	INTRODUCTION	1
2.0	GUIDANCE AND NOISE CRITERIA	3
3.0	NOISE SURVEYS	5
4.0	NOISE IMPACT ASSESSMENT	8
5.0	SUMMARY	10
FIGURE 1 – SITE LOCATION & NOISE MEASUREMENT POSITION		11
APPENDIX I: NOISE UNITS & INDICES		12
APPENDIX II: NOISE SURVEY RESULTS		14

1.0 INTRODUCTION

- 1.1 Hepworth Acoustics Ltd was commissioned by Tinapa an Afro-Caribbean Restaurant & Bar to carry out a noise impact assessment in connection with a retrospective planning application for the operation of the premises at 853 Ashton Old Road in Manchester.
- 1.2 This assessment has been carried out to determine any noise impact from the bar & restaurant, located on the ground floor of the building, on the nearest dwellings which are located some 35m from the rear of the premises on the adjacent Bartlett Street. We understand that ambience of the bar is relaxed, and as such music will be played at a level typical for this type of offering.
- 1.3 The building is of solid masonry construction and the only glazing on the ground floor is to the front elevation. Therefore, there are not any windows facing the dwellings to the rear. The premises includes a carparking/hardstanding area to the rear (north) with a concrete panel wall that is 2m in height enclosing the parking area.
- 1.4 The entrance to the building is from the front via a lobbied entrance. On the rear elevation are a set of solid metal fire escape doors that are kept shut except in an emergency. There are no outdoor seating areas, and the designated smoking area is at the front of the premises. Therefore, the main potential source of noise from the trading area towards the dwellings to the rear is sound breakout through the fire exit doors.
- 1.5 We understand that the first floor of the building is used as offices and are vacant during the opening times of the bar/restaurant. The building shares a party wall to the west with a taxi company located on the ground floor and ancillary spaces on the first floor. To the east is Bartlett Road with further commercial properties opposite.
- 1.6 To the rear of the property are two air conditioning condensers and kitchen ventilation equipment. All plant is mounted above head height at around first floor level.
- 1.7 The trading hours for the premises are as follows: 16:00 - 12:00 (Monday - Thursday), 16:00 - 02:30 (Friday and Saturday) and closed on Sundays. We understand the premises has traded within these times without complaint from nearby residents for a number of years.
- 1.8 The noise assessment has included:
 - An inspection of the ground floor trading space and surrounding area;

- Measurement of plant noise levels;
- Measurement of representative trading noise levels in the bar restaurant
- Assessment of plant noise and trading noise impact at the dwellings on Bartlett Street;
- Assessing any requirement for noise mitigation measures.

1.9 The various noise units and indices referred to in this report are described in Appendix I. All noise levels mentioned in the text have been rounded to the nearest decibel, as fractions of decibels are imperceptible.

2.0 GUIDANCE AND NOISE CRITERIA

- 2.1 Manchester City Council Planning & Noise Technical Guidance 2015 provides guidance for assessing the potential impact on nearby residents from building services plant noise and entertainment noise.
- 2.2 For plant noise the guidance states: *'The noise assessment should be based on BS 4142:2014 and any application for fixed plant, equipment or machinery must demonstrate that: 'Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location'.'*
- 2.3 To ensure that the development is suitable within the context of the planning permission being sought, the guidance states that *"...applicants and consultants should predict the noise impact of a proposed entertainment venue using noise levels that are representative of those found in 'typical' venues of the kind being applied for."*
- 2.4 The guidance also states that *"When considering the potential impact of a proposal for an entertainment venue consultants should consider the overall noise level (L_{Aeq}) and the 63 Hz and 125 Hz octave band noise levels (L_{eq})."*
- 2.5 To account for any potential low frequency noise, the Manchester City Council Technical Guidance provides the following criteria for new developments:
- "Music noise levels in the 63Hz and 125Hz octave centre frequency bands (L_{eq}) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB (L_{eq}), respectively."*
- 2.6 The guidance considers that operation within these criteria would result in *'inaudible'* or *'virtually inaudible'* entertainment noise inside dwellings, which would be desirable.
- 2.7 The following guidance is also provided regarding entertainment venues that are not structurally attached to the nearest dwelling,
- 2.8 *"A planning application for a new entertainment venue that is structurally detached from other building uses should demonstrate that music noise from the proposal will not be 'audible' in nearby residential properties, assuming that the residential properties in question have their windows open. The criterion here is: 'Entertainment noise (L_{Aeq}) should be controlled to 10dB below the background noise level (L_{A90}) without the entertainment noise present, in each octave band at the nearest noise sensitive location."*

2.9 Therefore, in this case we have adopted the following noise criteria to take into account the broadband L_{Aeq} noise levels and the 63Hz and 125Hz octave band noise levels (in L_{eq}) in line with the Manchester City Council Guidance discussed above:

- Trading noise levels in the 63Hz and 125Hz octave centre frequency bands (L_{Zeq}) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB (L_{Zeq}), respectively;
- Also, the trading noise levels (L_{Zeq}) should be 10 dB lower than the prevailing background noise levels (L_{Z90}) in each octave band outside the nearest dwellings.
- The cumulative noise level from externally mounted plant (L_{Zeq}) installed at the bar/restaurant should be 5 dB lower than the prevailing background noise levels (L_{Z90}) in each octave band outside the nearest dwellings.

3.0 NOISE SURVEYS

Background Noise Survey

- 3.1 Noise measurements were carried out during the night on a Friday night in order to establish the existing noise climate outside the nearest residential receptors towards the end of proposed trading times. Measurement Location 1 was close to the nearest dwelling on Bartlett Street.
- 3.2 The measurements were taken as a series of 15-minute periods. The measurements were taken between 00:00 and 02:00 on Saturday 20th March 2021. This survey period was chosen to be representative of the end of trading up to the latest trading times (i.e. up to 02:00 hours) for the bar. The weather conditions during the noise survey were cool/cold (approx. 9°C), partially cloudy, generally calm (with occasional light winds < 2m/s) and dry.
- 3.3 The noise measurements were carried out using a Brüel & Kjær 2250 'Class 1' sound analyser (s/n: 3011706). The meter was mounted onto a tripod at a height of approximately 1.4m above ground level. Calibration checks were carried out both before and after the measurement periods with a field calibrator with no variance in levels noted.
- 3.4 The measured noise levels were mainly due to local road traffic on Ashton Old Road and noise from the nearby Greggs Bakery factory to the north.
- 3.5 Full results of the noise measurements are shown in Appendix II. For the purposes of this assessment, the lowest measured background noise levels have been adopted as follows:

Table 1 Lowest measured background noise levels in terms of L_{90} (dB)

Location	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
Bartlett Street	49	42	37	31	29	24	15	12	35

- 3.6 These values have been used in the assessment in Section 4.0

Noise Measurements Close to Building Services Plant

- 3.7 The kitchen extract plant and air conditioning condensers are mounted on the rear elevation of the building as indicated in Figure 1 at around first floor height. We understand that the kitchen extract plant operates until midnight at the very latest and the air-condition units operate on a demand basis and are switched off once the premises closes.

- 3.8 Due to the steady nature of the plant noise, measurements of the plant noise levels were carried out in discrete short-term measurements.
- 3.9 All plant noise measurements were taken on Wednesday 10th March 2021 using a fully calibrated Brüel & Kjær 2250 'Class 1' sound levels meter (S/N: 3011706), field calibration checks were also carried out before and after the measurements with no deviation in calibration level. The microphone and windshield were attached to a pole via an extension cable and so that measurement could be taken at a distance of 1m from the front of the equipment.
- 3.10 During the noise measurements the kitchen extract plant and condensers were set to operate at the maximum intensity that it is used as we understand from the proprietor.
- 3.11 The noise measurements were taken at a distance of 0.5m from the front of the equipment. The noise levels measured with each item of plant operating exclusively are shown in Table 2 below.

Table 2: External Plant Noise Levels Measured at 0.5m

Description	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
2 Air Conditioning Condensers	67	68	63	61	57	53	50	44	63
Kitchen Extract	68	70	66	56	53	50	48	40	61

Trading Noise Measurements

- 3.12 For the purposes of the noise assessment (the premises being closed due to lockdown) typical source noise measurements of typical evening trading noise levels were taken within the premises using music played on the in house PA system. The genre of music played during the measurements was characteristic of, and at a volume that the premises will play once open.
- 3.13 These noise measurements were carried out on the late evening of Friday 19th March 2021. The noise measurements were taken as a series of short-term spatially averaged L_{eq} values in the main trading/dining areas.
- 3.14 The overall measured noise levels ranged from 81 – 86 dB L_{Aeq} , which is typical of the proposed trading style of the premises. The octave band values corresponding to the highest measured levels were as follows:

Table 3: Highest measured trading noise levels in terms of L_{eq} (dB)

Location	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
Trading Area Music	87	93	79	80	79	77	80	63	86

3.15 These values have been used in the assessment in Section 4.0

4.0 NOISE IMPACT ASSESSMENT

Trading Noise Breakout

- 4.1 Trading noise was measured on the Friday evening outside of the nearby dwelling during the periods whilst the music was playing. Music from the premises was not audible due to road traffic on Ashton Old Road and noise from the nearby Greggs Factory. Table 4 below is the calculation of trading noise at the nearest dwelling based on measurements of trading noise taken at 1m from the closed fire doors and taking into account the attenuation of sound over distance from the source.

Table 4: Assessment of impact of trading noise break-out (dB)

Location	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
Calculated resulting trading noise level outside nearest dwelling	30	26	13	13	13	9	1	-7	18
Lowest measured background level	49	42	37	31	29	24	15	12	36
Difference	-19	-14	-24	-18	-16	-15	-14	-19	-18

- 4.2 Table 4 shows that resulting noise levels outside the nearest dwelling due to Tinapa trading noise break-out will be very low and at least 10 dB below the lowest corresponding background noise levels in octave bands. Also, trading noise levels at 63Hz and 125Hz will be below 47dB and 41dB respectively in the nearest habitable rooms. We therefore conclude that noise associated with the trading area will be within the Manchester City Council noise criteria that are detailed in Section 3.0 and therefore no noise mitigation measures are warranted.

Plant Noise

- 4.3 We have calculated plant noise levels outside the dwellings on Bartlett Streeting taking into account the equipment layout and distance attenuation only. The calculated equipment noise levels are shown below alongside the relevant criteria.

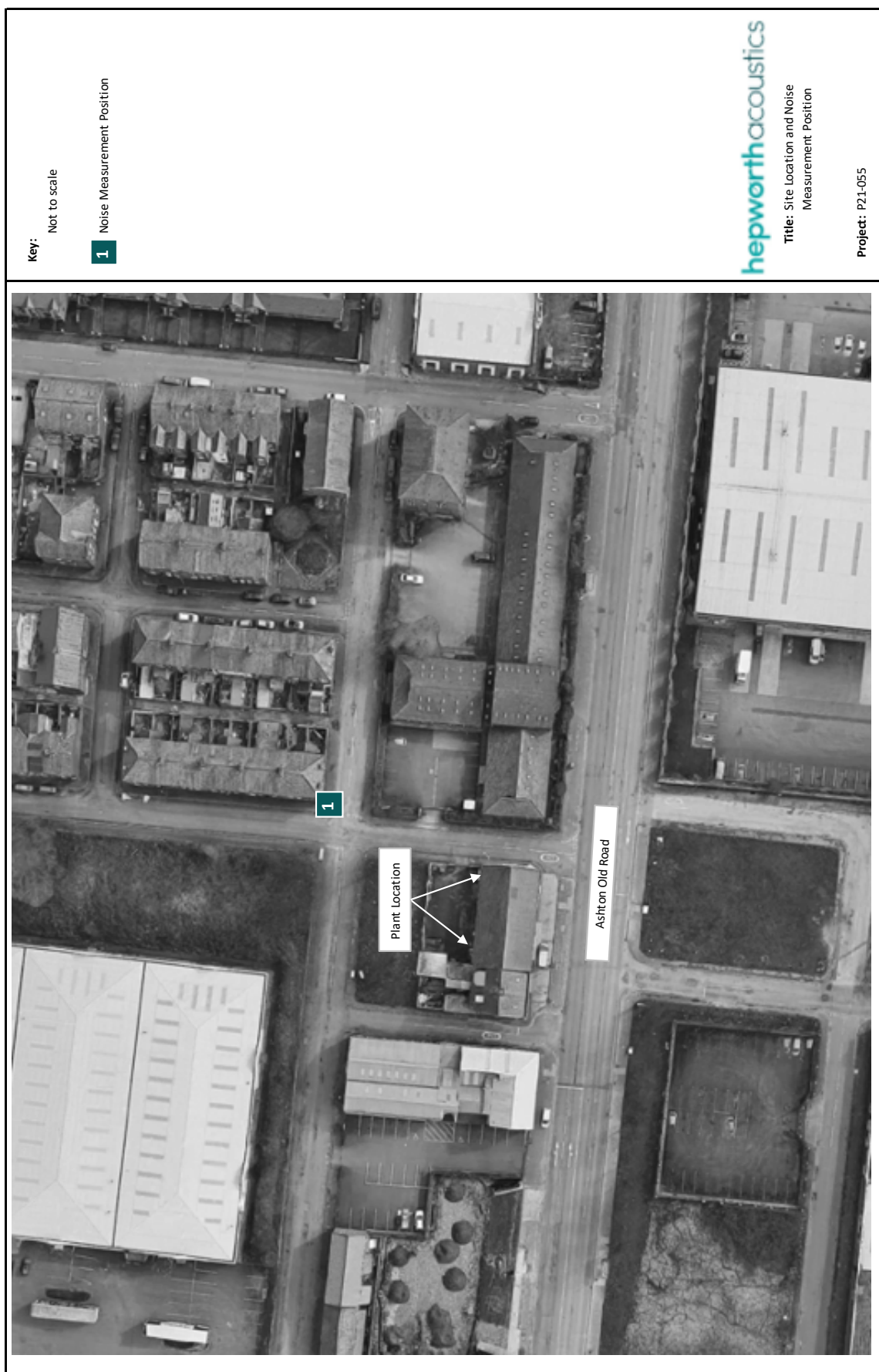
Table 5: Assessment of impact of plant noise at nearest dwelling (dB)

Location	Octave Band Centre Frequency (Hz)								A
	63	125	250	500	1k	2k	4k	8k	
Calculated combined plant noise levels outside nearest dwelling	32	34	29	24	21	17	14	7	27
Lowest Measured Background level (L_{A90})	49	42	37	31	29	24	15	12	36
Comparison with lowest background levels	-17	-8	-8	-7	-8	-7	-1	-5	-8

- 4.4 Table 5 shows that the calculated plant noise outside the nearest dwelling is 27 dB L_{Aeq} which is very low. This low level would not be measurable as it is below the prevailing background noise climate of the area.
- 4.5 Also, as can be seen in Table 5, the calculated plant noise levels at dwellings on Bartlett Street are below the octave band background noise levels by least 5 dB in all but the 4kHz octave band. It should be borne in mind that the background noise survey has been carried out through necessity during the Covid-19 pandemic and subsequent lockdown. As such current background noise levels are expected to be lower than in normal (i.e. non-lockdown) conditions especially in the evening and night due to the closure of the night-time economy.
- 4.6 Furthermore, the assessment is based on the condensers and the kitchen extract equipment operating until 02:00 when in all likelihood the kitchen extract system will be turned off at around midnight. It is considered likely that background noise levels will be higher during the early part of the night. Thus, the assessment is exceptionally robust, and we therefore conclude that noise associated with the trading area will be within the Manchester City Council noise criterion detailed in Section 3.0 and therefore no noise mitigation measures are warranted in respect of plant noise.
- .

5.0 SUMMARY

- 5.1 Hepworth Acoustics Ltd was commissioned by Tinapa Restaurant & Bar to carry out a noise impact assessment in connection with a retrospective planning application for a bar/restaurant at 853 Ashton Old Road in Manchester
- 5.2 Appropriate noise criteria have been adopted to protect the amenity of the nearest residents in Bartlett Street.
- 5.3 A noise survey was carried out towards the end of proposed trading times to measure the background noise climate in the area.
- 5.4 Noise impact of externally mount plant has been determined based on the noise survey data and Manchester City Council requirements. Breakout of trading area noise has also been calculated and assessed in line with Manchester City Council guidance.
- 5.5 The assessment has concluded that noise from trading area and mechanical services equipment is within the relevant Manchester City Council noise criteria and so no noise mitigation measures are necessary.



Appendix I: Noise Units & Indices

Sound and the decibel

A sound wave is a small fluctuation of atmospheric pressure. The human ear responds to these variations in pressure, producing the sensation of hearing. The ear can detect a very wide range of pressure variations. In order to cope with this wide range of pressure variations, a logarithmic scale is used to convert the values into manageable numbers. Although it might seem unusual to use a logarithmic scale to measure a physical phenomenon, it has been found that human hearing also responds to sound in an approximately logarithmic fashion. The dB (decibel) is the logarithmic unit used to describe sound (or noise) levels. The usual range of sound pressure levels is from 0 dB (threshold of hearing) to 120dB (threshold of pain).

Due to the logarithmic nature of decibels, when two noises of the same level are combined together, the total noise level is (under normal circumstances) 3 dB(A) higher than each of the individual noise levels e.g. 60 dB(A) plus 60 dB(A) = 63 dB(A). In terms of perceived 'loudness', a 3 dB(A) variation in noise level is a relatively small (but nevertheless just noticeable) change. An increase in noise level of 10 dB(A) generally corresponds to a doubling of perceived loudness. Likewise, a reduction in noise level of 10 dB(A) generally corresponds to a halving of perceived loudness.

The ear is not equally sensitive to sound at all frequencies. It is less sensitive to sound at low and very high frequencies, compared with the frequencies in between. Therefore, when measuring a sound made up of different frequencies, it is often useful to 'weight' each frequency appropriately, so that the measurement correlates better with what a person would actually hear. This is usually achieved by using an electronic filter called the 'A' weighting, which is built into sound level meters. Noise levels measured using the 'A' weighting are denoted dB(A) or dBA.

Frequency and Hertz (Hz)

As well as the loudness of a sound, the frequency content of a sound is also very important. Frequency is a measure of the rate of fluctuation of a sound wave. The unit used is cycles per second, or hertz (Hz). Sometimes large frequency values are written as kiloHertz (kHz), where 1 kHz = 1000 Hz.

Young people with normal hearing can hear frequencies in the range 20 Hz to 20 kHz. However, the upper frequency limit gradually reduces as a person gets older.

Glossary of Terms

When a noise level is constant and does not fluctuate, it can be described adequately by measuring the dB(A) level. However, when the noise level varies with time, the measured dB(A) level will vary as well. In this case it is therefore not possible to represent the noise climate with a simple dB(A) value. In order to describe noise where the level is continuously varying, a number of other indices can be used. The indices used in this report are described below.

L_{Aeq} This is the A-weighted 'equivalent continuous noise level' which is an average of the total sound energy measured over a specified time period. In other words, L_{Aeq} is the level of a continuous noise which has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period. It is increasingly being used as the preferred parameter for all forms of environmental noise.

L_{A90} This is the A-weighted noise level exceeded for 90% of the time period. L_{A90} is used as a measure of background noise.

Appendix II: Background Noise Survey Results

Date(s):	Early hours of Saturday 20 th March 2021
Equipment:	Brüel & Kjær 2250 'Type 1' sound analyser (serial no. 3011706) with tripod and
	calibrator
Weather:	Dry, cold (~7-9°C), clear skies and calm (<2 m/s)

All levels in dB(A)

Location 1:

Time		Measured Noise Levels (dB)			Comments
Start	End	L _{Amax}	L _{Aeq}	L _{A90}	
00:03	00:18	69.7	47.1	39.2	Gregg's bakery and passing vehicles on Ashton Old Road
00:18	00:33	62.4	47.8	39.5	
00:33	00:48	64.6	48.6	41.0	
00:48	01:03	57.7	45.2	40.3	
01:03	01:18	61.9	46.4	36.4	
01:18	01:33	60.5	47.8	37.6	
01:33	01:48	66.1	47.8	36.8	
01:48	02:03	65.7	47.4	38.8	