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108 Wilmslow Road, Manchester

Planning Noise Impact Assessment

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19077 108 Wilmslow Road R01.570.B

Client: Mr Alexandru Samptrean

Date: 24 October 2019

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Contents

Contents 1

Introduction..... 2

Development Proposals 2

Assessment Criteria 3

Site Description 4

Noise Survey 4

Assessment..... 7

Conclusions..... 9

Appendix A – Glossary of Acoustic Terminology..... 10

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Introduction

dBx Acoustics Ltd has been instructed by Mr Alexandru Samptrean to provide an acoustic assessment of the proposed 570-seat Shisha Café at the first floor of 108 Wilmslow Road, Rusholme, Manchester, to accompany a planning application. This represents a change from the existing use of the premises from use class A3 café/restaurant to use class sui generis shisha bar.

The purpose of this document is to report on the environmental noise survey carried out at the site, and to review the potential noise impact of activity noise, car parking and building services noise emissions, in accordance with the requirements of Manchester City Council.

Basis of Noise Assessment

The principle aims of the noise assessment are summarised below:

- Assess the acoustic suitability of the site for the proposed change of use; and
- Control noise breakout from building services and activity noise to nearby sensitive receptors.

The noise impact assessment is based on the following:

- Manchester City Council *Planning and Noise Technical Guidance* December 2015

Development Proposals

It is understood that the first floor of 108 Wilmslow Road is to be converted from its current use as a restaurant/cafe for use as a shisha café, with a maximum capacity of 570 patrons. Although there is a change of use class, the acoustic characteristics of the proposed use would be expected to be near identical to those of the current use, i.e. patron conversations with the potential for low level amplified background music.

The proposed opening hours are as follows:

Sunday-Thursday 0900-2230

Friday and Saturday 0900-2300

There are understood to be no DJ booths or live entertainment associated with the development.

There are believed to be no restrictions on the opening hours of the premises as present, as such, given the similar noise-generation characteristics of the present and proposed use, there is a beneficial impact to residents in that any activity noise associated with the premises will be reduced in duration.

The unit at 108 Wilmslow Road is fully self-contained at first floor level. The frontage of the building to Wilmslow Road has double glazed windows, with a door at ground floor level which

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is the primary entrance and exit from the building. It is understood that these windows are openable for ventilation. There is space internally for patrons to wait to be seated and as such it is not anticipated that there will be any external queue.

There is no new building services plant associated with this application. There is no staff or patron ingress or access to the rear of the building. There is a bin store to the rear of the building accessed via a roller shutter; the applicant expects that this roller shutter would only be operated during the daytime period in order to minimize any potential disturbance to residents.

Assessment Criteria

Manchester City Council

Manchester City Council's document *Planning and Noise Technical Guidance* contains a number of requirements applicable to this scheme which can be summarized as follows;

Overall Impact

The development should aim for a noise level between the no observed effect level (NOEL) and Lowest Observed Adverse Effect Level (LOAEL) should be targeted.

Building Services

MCC requires 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 5 dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location.*

It is understood that no new building services plant is proposed. This criterion is therefore not discussed further.

Entertainment Noise

For new entertainment venues, or venues which may use music, the following condition would apply to ensure inaudibility in nearby residential properties:

- 'Entertainment noise (L_{Aeq}) should be controlled to 10 dB below the background noise level (L_{A90}) without the entertainment noise present, in each octave band at the nearest noise sensitive location'.

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Site Description

The Site

The site is located on Wilmslow Road on the Curry Mile in Rusholme. To the rear is an alley and a residential street, Eva Street. The premises are fully self-contained at first floor level, above a number of late-night cafes and takeaways which are independent of the premises at 108 Wilmslow Road.

Nearby Noise Sensitive Receptors

Residential buildings which should be considered as noise sensitive receptors are detailed in Table 1, below.

Table 1 – Nearby noise sensitive receptors

Receptor	Approximate Distance from Development
13 Eva Street, R1	5m
Flats above restaurants on Wilmslow Road,R2	20m

Noise Survey

A noise survey was carried out at the site by dBx Acoustics in the late evening and early morning of 2-3 October 2019. Measurements were taken at two locations surrounding 108 Wilmslow Road, as identified in Figure 2, below;

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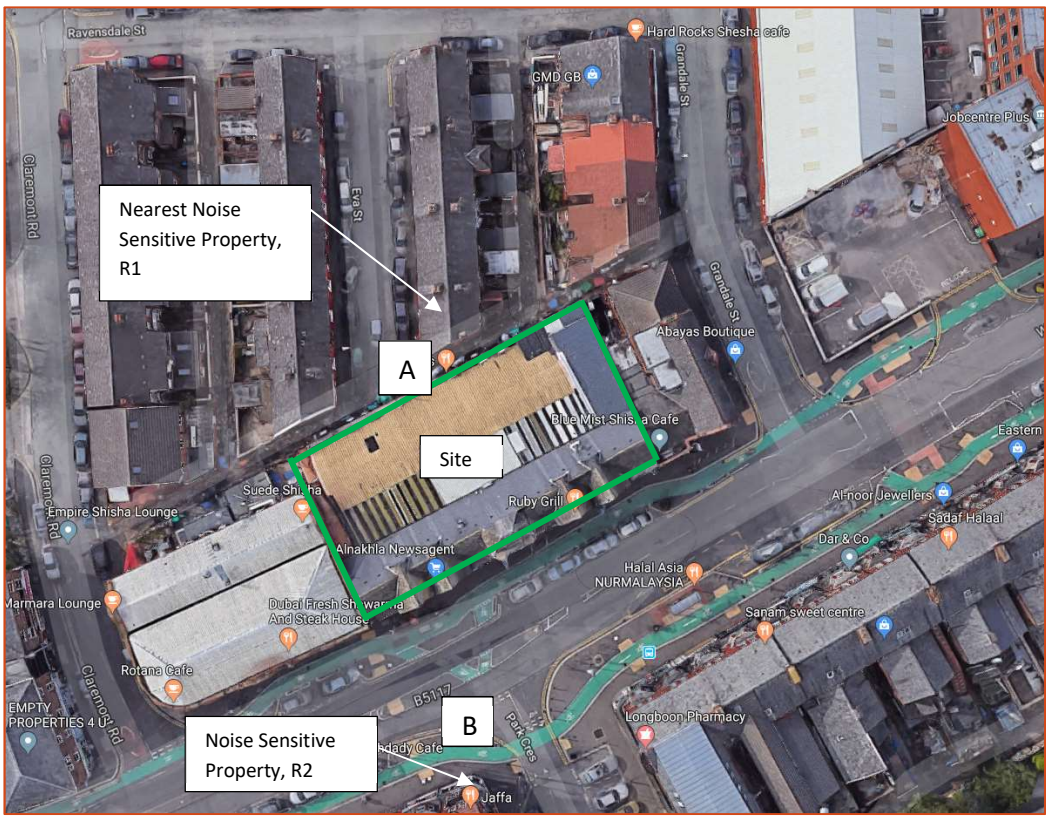
Figure 2: Site location and measurement positions



- Location A was on the corner of Eva Street, behind the site location. The dominant source of noise was the external plant units serving the ground floor units at 102, 102a, 104, 106, 110, 112a and 112b Wilmslow Road. These units are not associated with the proposed shisha café. Maximum noise events at this location were caused by loud conversations from staff at these café/restaurant units on breaks, and occasional use of a roller shutter door, again not associated with activity at 108 Wilmslow Road. There was no significant noise from passers-by.
- Location B was at the junction between Wilmslow Road and Park Crescent. At this location, the main source of ambient noise was road traffic on Wilmslow Road, with background noise levels associated with external plant operating at surrounding premises. Maximum noise events were caused by a loose manhole cover, and vehicle pass-bys.

The noise monitoring equipment used was a Norsonic 140 Type 1 Sound Level Meter with serial number 1405619. On site calibration checks were performed before and after the measurements using a Norsonic 1251 sound calibrator, serial number 33827, and were found to be within the permitted tolerance of BS EN 61672-1:2013. All equipment had a valid calibration certificate at the time of the survey and the microphone was fitted with a windshield to prevent wind noise from affecting the measurements.

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For all measurements the microphone was located 1.3m above ground / floor level and 3.5m away from any other reflective surface, i.e. in free field conditions. Measurements were all of 15 minutes' duration.

Measurements were undertaken in accordance with BS 7445-1:2003 *Description and Measurement of Environmental Noise*. The figures below identify the site in relation to the major noise generating infrastructure in the area, as well as the noise survey locations.

The weather during the measurements was cold, still and dry, with around 30% cloud cover. Little to no wind was present during the surveys. Occasional gusts were measured at speeds of up to 3m/s.

The measured daytime noise levels are presented in Table 1, below;

Table 2: Measured Daytime Noise Levels

Location	Date and Time	L_{Aeq} (dB)	L_{A90} (dB)	$L_{Amax,}$(dB)
A	22:11-22:26	72	69	82
	22:32-22:47	58	56	77
	23:38-23:53	55	54	70
	00:11-00:26	51	49	71
	00:46-01:01	54	48	66
B	22:49-23:04	64	55	91
	00:28-00:43	61	49	79

The lowest octave band background noise levels are detailed in Table 3, below.

Table 3: External Background Noise Levels L_{90}

Measurement Location	Background sound levels in octave bands, L90 (dB)								
	63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	dBA
Location A Eva St	59	56	53	52	49	46	37	28	**55**
Location B Wilmslow Road	54	52	47	48	42	36	28	20	**48**

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Assessment

Activity Noise – Receptor R1

The noise breaking out of the rear of the proposed shisha café has been calculated to determine the potential noise impact on receptor R1. This calculation is highly conservative, assuming that noise levels within the rear portion of the premises are reduced by only 20dB compared to the active shisha café area by the internal walls.

The noise breaking out of the rear of the proposed shisha café was calculated using a cavity wall construction with a sound insulation performance of 45dBR_w to represent the construction at this location which is understood to be an insulated steel sheet with plasterboard internal lining.

For the internal noise levels, typical loud restaurant noise levels of 84dB$L_{Aeq,T}$ measured by dBx Acoustics within lively city-centre café/bars were used.

The calculation is presented as Figure 1, below:

Figure 1: Break Out Calculation, R1 Eva Street

Room to Exterior

Date: 23-Oct-19
Job No:
Project: 108 Wilmslow Road
Title: Noise Break Out to Eva Street

Frequency	63	125	250	500	1k	2k	4k	8k	A	NR
Room Lp	73	72	76	77	79	77	75	68	83	79
Wall SRI	28	34	34	40	56	73	76	78		**From comp sri sheet**

Wall dimensions length: 20.00 m
height: 4.00 m

Distance from wall to receive: 5.0 m

Directivity index of location (0, 3, 6 or 9): 3

0 = free space
3 = junction with surface
5 = junction of two surfaces
6 = junction of three surfaces

Frequency	63	125	250	500	1k	2k	4k	8k	A	NR
Receive Lp	36.1	29.1	33.1	28.1	14.1	-4.9	-9.9	-18.9	28.0	23.7
Limit	59	56	53	52	49	46	37	28	**Measured L90 for Façade at A**	
Difference	-22.9	-26.9	-19.9	-23.9	-34.9	-50.9	-46.9	-46.9		

As shown by Figure 1, the predicted noise levels breaking out from the proposed shisha café are significantly below the existing background noise level in each octave band. This therefore easily meets MCC's standard planning condition of at least 10dB below the existing background noise level in each octave band.

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Activity Noise – Receptor R2

The lowest background noise levels measured were at location B. These noise levels can be considered as representative of the typical background noises levels at receptor R2.

The noise breaking out of the front of the proposed shisha café was then calculated using a cavity wall construction with a sound insulation performance of 45dBR_w and typical performance of approximately 15dB internal to external level difference via windows which are open for ventilation. For the internal noise levels, typical loud restaurant noise levels of 84dB$L_{Aeq,T}$ measured previously were used.

In order to comply with the requirements of Manchester City Council, the noise levels arising due to activity noise at the premises (L_{Aeq}) should be at least 10 dB below the background noise level (L_{A90}) in each octave band at the noise sensitive location. The calculation is presented as Figure 2, below;

Figure 2: Break Out Calculation, R2 Wilmslow Road

Room to Exterior

Date: 23-Oct-19
Job No:
Project: 108 Wilmslow Road
Title: Noise Break Out to R2 Wilmslow Road

Frequency	63	125	250	500	1k	2k	4k	8k	A	NR
Room Lp	73	72	76	77	79	77	75	68	83	79
Wall SRI	25	25	26	27	26	25	27	26		**From comp sri sheet**

Wall dimensions length: 20.00 m
height: 4.00 m

Distance from wall to receive: 20.0 m

Directivity index of location (0, 3, 6 or 9): 3

0 = free space
3 = junction with surface
5 = junction of two surfaces
6 = junction of three surfaces

Frequency	63	125	250	500	1k	2k	4k	8k	A	NR
Receive Lp	28.5	27.1	29.9	30.3	32.9	31.9	28.0	21.9	37.4	34.9
Limit	65	60	59	57	57	50	43	32	**Measured L90 at Location B**	
Difference	-36.5	-32.9	-29.1	-26.7	-24.1	-18.1	-15.0	-10.1		

As shown by Figure 2, the predicted noise levels breaking out from the proposed shisha café are better than 10dB below the existing background noise level in each octave band. This therefore meets MCC's standard planning condition.

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Parking / Traffic Generation

This application represents a change of use from A3 café/restaurant to sui generis shisha café. We would not anticipate any significant change to traffic generation or parking requirements as a result of this change and, as such, no adverse noise impact from these sources would be expected.

During the noise survey it was noted that Eva Street is used for residential parking, and there was no significant noise from vehicle movements, car door slams etc.

Conclusions

This report presents an assessment of potential noise emissions from the change of use of the first-floor premises at 108 Wilmslow Road from Class A3 café/restaurant use to Class Sui Generis shisha café use with a capacity of 570 patrons.

A noise survey has been carried out at the site which informs the noise impact assessment. Given the orientation of the building and proximity, 13 Eva Street, to the rear of the site, has been identified as the nearest noise sensitive location. A flat above Jaffa Mediterranean Restaurant on Wilmslow Road was also assessed as a noise sensitive location.

Typical internal noise levels and the sound insulation performances of the front and rear facades were used in order to calculate the noise break out from the proposed shisha café at each noise sensitive location. This includes with windows to Wilmslow Road open for ventilation.

At both noise sensitive receptors, the calculated noise levels breaking out from the proposed shisha café are at least 10dB below the existing background noise levels in all octave bands and therefore compliant with the requirements of Manchester City Council.

There is no new building services plant associated with this application.

The proposed change of use is not expected to lead to any change in noise levels from transportation noise or car parking etc.

Noise should therefore not be a limiting factor in any planning application.

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Appendix A – Glossary of Acoustic Terminology

Decibel, dB	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. For sound pressure level (L_p) the reference quantity is $2x10^{-5}$ N/m^2. The sound pressure level existing when microphone measured pressure is $2x10^{-5}$ N/m^2 is 0 dB, the threshold of hearing.
L	Instantaneous value of Sound Pressure Level (L_p) or Sound Power Level (L_w).
Frequency	Number of cycles per second, measured in hertz (Hz), related to sound pitch.
A weighting	Arithmetic corrections applied to values of L_p according to frequency. When logarithmically summed for all frequencies, the resulting single "A weighted value" becomes comparable with other such values from which a comparative loudness judgement can be made, then, without knowledge of frequency content of the source.
$L_{eq,T}$	Equivalent continuous level of sound pressure which, if it actually existed for the integration time period T of the measurement, would possess the same energy as the constantly varying values of L_p actually measured.
$L_{Aeq,T}$	Equivalent continuous level of A weighted sound pressure which, if it actually existed for the integration time period, T, of the measurement would possess the same energy as the constantly varying values of L_p actually measured.
$L_{n,T}$	L_p which was exceeded for n% of time, T.
$L_{An,T}$	Level in dBA which was exceeded for n% of time, T.
$L_{max,T}$	The instantaneous maximum sound pressure level which occurred during time, T.
$L_{Amax,T}$	The instantaneous maximum A weighted sound pressure level which occurred during time, T.