

Savills (UK) Limited

MCDONALD'S, PICCADILLY GARDENS
#1480

Noise Impact Assessment

Report No. 14-0167-87 R01





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Report No.: 14-0167-87 R01

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0 NON TECHNICAL SUMMARY

- 0.1 The McDonald's located at Piccadilly Gardens has permission to operate 06:00 - 00:00, 7 days a week, and is investigating the possibility of extending its opening hours to 05:00 – 02:00.
- 0.2 A noise impact assessment was completed between 23:00 - 07:00 on 3rd – 4th November 2021 to investigate the existing noise climate with and without the normal operation of the store.
- 0.3 The McDonald's is located on 11-13 Piccadilly Gardens, Manchester M1 1LY. Road traffic noise is a major contributor to the noise climate around the site. The closest noise sensitive receptors are identified as those on the corner of the building at 15 Piccadilly, circa 25m away.
- 0.4 An assessment of the potential noise impact due to the extension of operating hours has been undertaken for the four principal noise sources. The significance of each has been assessed with national planning and noise policy regarding the Noise Policy Statement for England 2010, and therefore the National Planning Policy Framework:

Effect Threshold	Subjective / Objective Assessment levels at 3m in-front of residential façades			
	People	Vehicles	COD	Roof Plant
Significant observable adverse effect (SOAEL)				
Lowest observable adverse effect level (LOAEL)	✓			
No observable effect level (NOEL)	✓	✓	✓	✓

Table 0: Noise Significance Impact Thresholds for extending hours of operation of store - in green after mitigation

- 0.5 The assessment shows that, with an appropriate noise management plan, the noise impact from an extension to hours would be likely to cause no observable adverse effect. This would meet the aspiration set out by Paragraph 123 of the NPPF and the Noise Policy Statement for England would be achieved.
- 0.6 A Premises Noise Management Plan is proposed and set out in Appendix B. Such a plan establishes good practice proactively, and will reduce the risk of associated noise impact on the quality of amenity to a minimum. The impact on residents can be expected to be reduced overall by allowing this application, by introducing good practice at all times of the day, and allowing potential customers an internal space during later hours of the night.

1 INTRODUCTION

- 1.1 Sustainable Acoustics Ltd is an independent acoustic consultancy who has been commissioned to carry out a noise impact assessment, as part of the planning application for the proposed extension of hours of McDonald's (#1480) Manchester Piccadilly Gardens, M1 1LY.
- 1.2 It is understood that the restaurant currently has permission to operate between 06:00 - 00:00, 7 days a week, and it is currently sought to investigate the viability of applying for an extension for the hours of 05:00 – 02:00 (to open 1 hour earlier, and close 2 hour later).
- 1.3 A noise survey has been undertaken between 23:00 - 07:00 on the 3rd – 4th November 2021 that established the existing activity around the site during the evening and morning, as well as the night-time period when the store is currently closed, in order to inform an assessment of the likely noise impact during the proposed additional hours.
- 1.4 The assessment has been completed with regard for national policy on noise, relevant to England (NPSE), which specifies the approach to be taken to achieve the requirements of the National Planning Policy Framework (NPPF).

2 THE AREA & CHARACTER

- 2.1 McDonald's [#1480] Piccadilly Gardens is located at 11-13 Piccadilly, Manchester M1 1LY. The store is located in the middle of a highly urbanised area within the city. There are surrounding buildings in every compass direction; they are largely commercial, though 15 and 17 Piccadilly Gardens have been identified as residential dwellings close to the store, and one of the commercial spaces nearby is a hotel. Figure 1 shows a map of the local area, with closest noise sensitive receivers (as identified on site) marked.

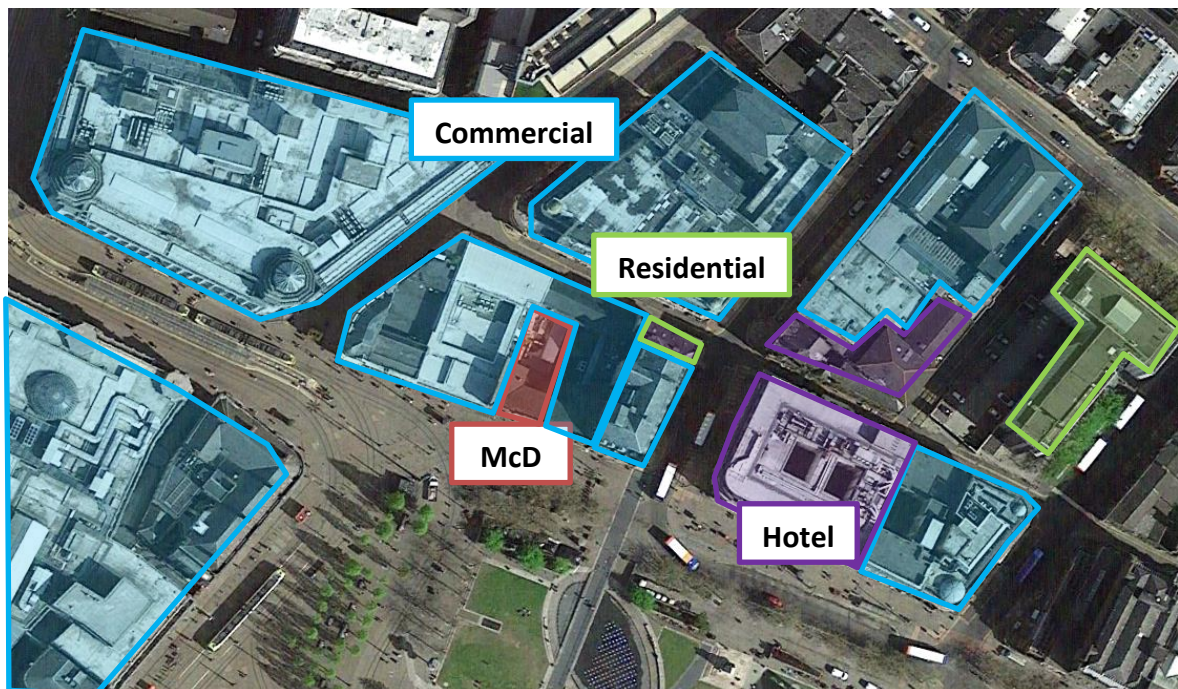


Figure 1: Map of local area with context

- 2.2 This particular McDonalds store does not have a drive-thru facility, being one of the urban branches, as such does not have a Communications Operating Device (COD) intercom for ordering food. Similarly, there is no customer car park.
- 2.3 Piccadilly Gardens is a green space in Manchester city centre, on the edge of the Northern Quarter. The gardens also contain a bus station and a tram stop. Ambient noise levels were dominated by pedestrian voices from continuous crowds of people, as well as continuous vehicle noise, constantly audible from movements on the surrounding road network, as well as tram movements nearby.
- 2.4 There is a large number of bars and restaurants open late, and it is a hive of people activity and people noise. There is a Burger King fast food restaurant less than 100m from the McDonald's (to the south-west) which is already trading 24 hours a day, 7 days a week.
- 2.5 Some city development work was occurring in the square during the visit, whereby a forklift was in operation, adding to the ambient noise levels.
- 2.6 Figure 2 shows the store surroundings more in detail, where it can be seen that the closest noise-sensitive receivers to the kitchen extract located in the middle of the McDonald's flat roof are approximately **25m** away at 15 Piccadilly, and the closest noise-sensitive receivers to potential customers are approximately **55m** away from the front of the store at the hotel on Oldham Street.
- 2.7 The exact location of 17 Piccadilly is not publicly available, though it is understood that this is currently proposed to be converted to residential. In any case, it is considered that the courtyard-facing windows will be as far from the building plant as those at 15 Piccadilly.

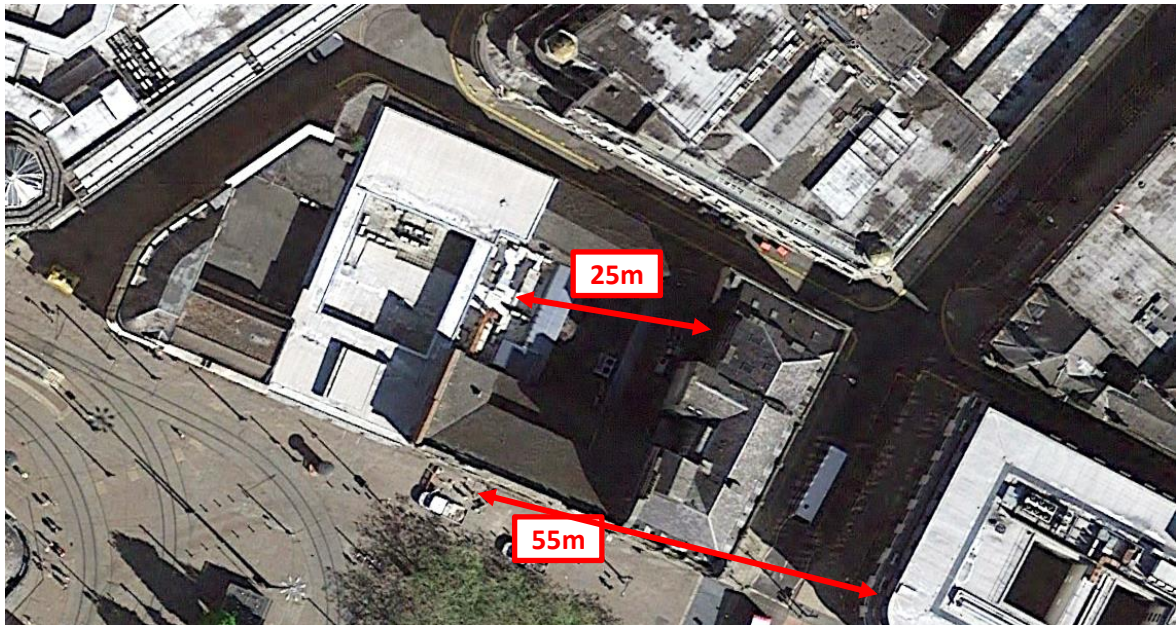


Figure 2: Map of local area with distances to residential properties

3 NOISE SURVEYS

- 3.1 **Attended survey:** An attended survey was undertaken at the site between 23:00 and 00:30 on 3rd November 2021 to capture the closing period of the store, as well as a period of time where the store was closed, with a second attended survey being carried out between 04:30 and 06:30 on 4th November to capture the opening period of the store, as well as a period of time when the store was closed. The attended measurements were carried out at different positions, chosen in order to measure and establish the typical noise levels for activities associated with the McDonald's operation, as well as ambient noise levels in the area. Observations were also made during the attended measurements, which were at suitable positions to have a view of those arriving and leaving the restaurant. Observations and measurements made during the attended survey are summarised in Appendix A.
- 3.2 **Unattended survey:** Monitoring was also undertaken at fixed position on the roof of the store to inform of representative ambient noise levels at a position close to the residential facades. This position logged noise levels in 15 minute periods over the survey period, covering the attended measurements and also the intervening hours between the start of the unattended portion of the survey and leaving the site.
- 3.3 **Conditions:** The weather was cold, between 5 - 10°C, and dry for the duration of the survey. Wind speeds were light, below 3 m/s for the duration of the measurements. Wind direction was generally southerly during the survey, though is not considered likely to have affected the results as the sources are in close proximity to the measurement positions.
- 3.4 **Locations:** Measurement positions are shown at Figure 3. Measurements were taken between 1.2 to 1.5m above the ground and at least 3m from a reflective surface.

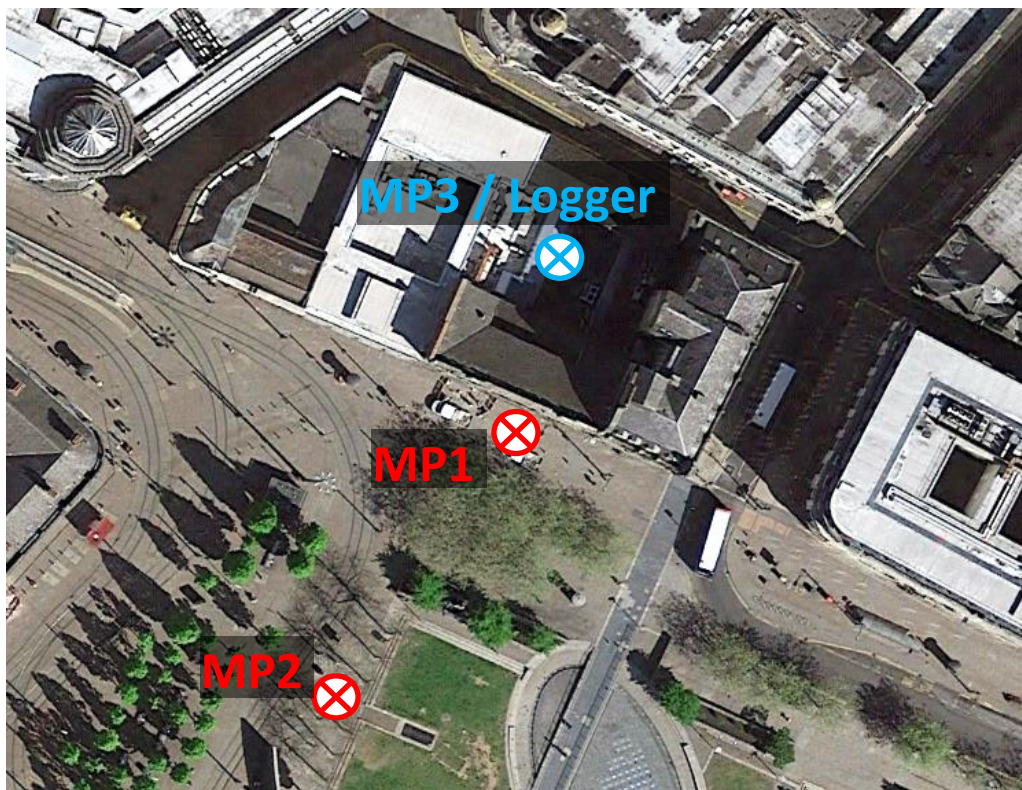


Figure 3: Attended measurement positions



3.5 Equipment: The following equipment was used in the surveys.

Equipment	Type	Serial Number
Rion Class 1 sound level meter	NA-28	00170246
Preamplifier	NH-23	60254
Microphone	UC-59	00299
Svantek Class 1 Sound Level Meter	971	60684
Preamplifier	SV18	62752
Microphone	7052E	66699
Svantek Sound Level Calibrator	SV33	58228

Table 1: The equipment used during the survey between 3rd – 4th November 2021

3.6 All equipment is within regularly traceable calibration and the meters were calibrated using field calibrators before and after the survey periods, without significant drift observed.

4 NATIONAL NOISE PLANNING GUIDANCE & ASSESSMENT CRITERIA

4.1 The Assessment criteria used in this report are based on the following local and national policies, and national and international standards:

- Manchester City Council Local Plan Core Strategy
- BS EN ISO 4142:2012 – Methods for rating and assessing industrial and commercial sound
- The National Planning Policy Framework (NPPF) and Noise Policy Statement England (NPSE)

Full details of the relevant policies and standards can be found in Appendix B

5 SUBJECTIVE OBSERVATIONS

5.1 Ambient Noise / Area Comments (noise that is NOT associated with the McD store)

It was observed that the store is located in a very busy urban area, with the dominant noise source being a combination of constant underlying traffic (Newton St and road network to north) and a constant flow of pedestrians conversing.

Noise from pedestrians walking by Piccadilly and through the main square ranged from footsteps and outdoor conversational voices, all the way to raucous laughter and shouting. Pedestrians were seen moving in all directions throughout the duration of the survey.

The tram noise was fairly frequent, and included noise from squeaky rails. Also observed was a road sweeper, which passed right by the front of the store, generating significant noise. Bus noise drew attention as a significant noise source; buses were fairly frequent and moved towards the bus stop outside the hotel to the east.

Ongoing noise was observed during the survey from a forklift, including movement of the vehicle, and beeping noise. Chants from crowds of people in the square could be heard during the evening part of the survey. Some disorderly shouting was observed from the vicinity.



Plant from commercial units was generally inaudible at street level, though some background fan noise could be heard from a nearby ad during the morning survey.

5.2 People noise - McDonalds

There was a constant flow of people to and from the store. The majority of people entered and left the building without generating significant levels of noise, though groups of people with raised voices were observed leaving McDonalds store in the last hour of opening. It is relevant to note that there were a large number of people with raised voices observed in the square and vicinity during the same period, and so these specific noises may have occurred regardless of whether McDonald's was open or not. In any case, this example of a raised voice from a customer did not introduce a new type of noise to the area.

5.3 Vehicles - McDonalds

This store does not have a drive-thru or car park for customers.

It is understood that this store provides deliveries via Uber Eats, though none were observed during the survey

5.4 COD/Other

This store does not have a drive-thru, and therefore, does not have a COD.

A noticeable noise event was observed from the closing of the store when the metal roller/grille/shutter was slammed closed.

5.5 Plant - McDonalds

Plant noise from McDonald's was not audible at ground level during the survey, though would have been expected to be audible at first floor, facing inwards towards the courtyard.

6 RESULTS

6.1 Attended survey noise levels (positions MP1 to MP3)

Appendix A summarises the attended measurements, which highlights the noise levels due to the operation of the McDonald's.

6.2 Customer Counts (Currently operating hours)

The typical number of customers attending during the **last hour of opening (23:00 – 00:00)** has been provided by the store, and is given in Table 2 below.

	Drive-Thru	Car Park	On Foot
23:00 – 00:00 (typical)	-	-	110
23:00 – 00:00 (event)	-	-	325

Table 2: Estimated customer counts during opening hours of store



6.3 Customer Counts (Predicted)

The store have not been able to provide a prediction of the anticipated number of customers for the proposed operating hours, and so it has been considered worth observing the predicted customer counts from an alternative store; specifically, a city-based store, without a drive-thru.

Sustainable Acoustics have these counts for McDonald's store #496 (Sheffield). These are given in terms of percentages relative to the number of customers between 23:00 and 00:00 for Friday/Saturday nights, in Table 3 below, along with projected counts for #1480, using these percentages.

	Predicted % of customers relative to the current number between 23:00 – 00:00 on Friday/Saturday nights, at store #496, Sheffield	Projected number of customers at #1480 Piccadilly Gardens, based on counts provided by the store, and patterns observed at #496	
		Typical	Event
23:00 – 00:00	100.0%	110	325
00:00 – 01:00	76.9%	85	250
01:00 – 02:00	34.6%	38	113
05:00 – 06:00	39.0%	43	127

Table 3: Estimated customer counts during proposed hours of store

6.4 Unattended survey

The variation of ambient noise levels (L_{Amax} , L_{Aeq} , L_{A90}) between 21:00 3rd November and 07:00 on the 4th November 2021 are shown in 15 minute intervals in Figure 4.

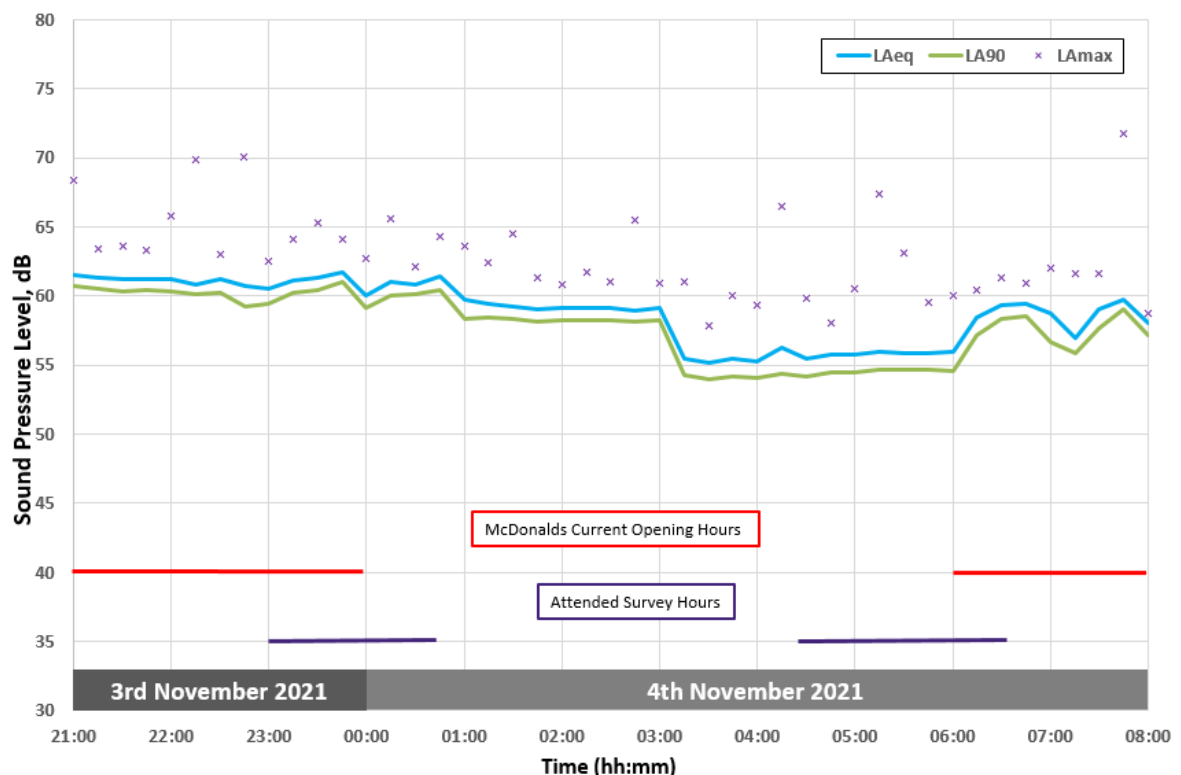


Figure 4: 15 minute time history at logging position



7 ASSESSMENT

7.1 People / ASB

- 7.1.1 Some significant noise from people's voices was observed during the site visit in the vicinity around McDonald's, some short-term events of which stood out over the existing ambient and background levels; however, using noise measurements alone, **it is not possible to determine whether these noise levels would have occurred independently of McDonalds operation.** Additionally, the noises observed from customers between 23:00 and 00:00 cannot necessarily be assumed to be representative of any potential noise from customers after 00:00, at which point there were fewer people in the square.
- 7.1.2 Typical raised voices are generally of the order of 75 - 80 dB at conversational distances (approximately 1m), and would radiate as hemispherical point sources. The store is some 55m from the nearest receptors; however, customers may arrive/depart via Oldham Street or Piccadilly, approximately 10m from the hotel, and residents at 15 Piccadilly. At this distance, short-term maximums outside windows from raised voices may be of the order of 58 – 63 dB L_{Amax} .
- 7.1.3 The area is vibrant and noisy, and people noise was observed throughout the duration of the attended survey, after midnight. There is already a Burger King fast food chain serving 24 hours a day, which faces on to Piccadilly Gardens. This is considered to be a very similar type of trade, and therefore it is considered unlikely that new noise character would be added to the area, should McDonald's extend their hours.
- 7.1.4 Guidance from BS 8233:2014 is generally considered to establish aspirational targets for internal ambient noise levels in the case of new housing, but the standard no longer provides specific guidance on acceptable maximum noise levels. However the guideline value for the onset of sleep disturbance, given in the World Health Organisation (WHO) guidelines, is 45 dB L_{Amax} within bedrooms. The guidance suggests limiting events exceeding 45dB L_{Amax} .
- 7.1.5 If the attenuation through an open window is assumed to be 15 dB (BS 8233:2014 Annex G), the corresponding external noise level would be 60 dB L_{Amax} ; however, the windows of the hotel appear to use fixed glazing, and so additional attenuation to may be expected. If windows of the hotel employ fixed glazing, it is unlikely that people noise would reach maximums of over 45 dB L_{Amax} internally, (though voices may still be audible inside).
- 7.1.6 Bedroom windows of 15 Piccadilly do not face on to the main square.
- 7.1.7 **If** a worst-case is considered whereby McDonald's operation brings a customer who generates such noise levels (who otherwise wouldn't have been in the area/generating noise), and **if** the windows to the hotel rooms are ajar, it is possible that the internal maximum from this noise may exceed 45 dB L_{Amax} internally; however, measurements indicate that this level would **already be being exceeded by other, unrelated noises from the square.** Hypothetically, a change in the number of occurrences of maximum noise levels could be possible, but not a change in whether or not maximum levels meet the WHO guidelines for internal maximum levels at night.
- 7.1.8 This worst-case may see a lowest observable adverse effect level (LOAEL), but **there is no evidence to suggest a No Observable Adverse Effect Level (NOEL) can't be achieved**, if proper noise management was enforced. It is considered that the best way to deal with hypothetical people noise, should it become an issue in the future, is via the antisocial behaviour policy protocol as outlined in Appendix E; which should be implemented in full to mitigate the noise.



7.2 Vehicles

7.2.1 ***Whilst this store has no car park or drive-thru, noise from potential deliveries should be assessed.***

7.2.2 To assess potential noise from the additional opening hours of McDonald's, the noise from vehicles passing by the closest point to the residential properties will be added to the existing ambient noise level to establish the worst-case predicted increase in ambient noise level due to the operation of McDonald's.

7.2.3 Uber Eats do use motorised scooters, but limit vehicles to engine sizes of 50CC. From previous surveys, scooters were found to have similar maximum noise levels to those of petrol cars. The Sound Power Level of the moving source is estimated to be of **91 dB** in a typical worst-case.

7.2.4 It is generally considered that the minimum perceivable change in ambient noise level is 3 dB. It is noted that this is the case for steady state, anonymous sources. Using 3 dB as a useful benchmark against which to assess the predicted change in ambient noise levels.

7.2.5 Assuming a delivery vehicle would generate noise for approximately 10s, and assuming all this noise propagates from the segment of road closest to the nearest receptor window; the number of deliveries required to increase the ambient noise levels by 3 dB is given below in Table 4.

	Existing Ambient Noise Levels, dB $L_{Aeq,1hour}$	Level required for just noticeable change in ambient (+3.0 dB)	Vehicle noise level at closest receiver window during arrival/departure of a single delivery vehicle, dB $L_{Aeq,T}$	Number of delivery vehicles required to increase ambient levels by 3dB.
00:00 – 01:00	60.0	63.0	63	170
01:00 – 02:00	59.0	62.0	63	135
05:00 – 06:00	55.8	58.8	63	60

Table 4: Calculation of the number of delivery vehicles necessary to cause significant change in ambient noise level at closest residential receiver

7.2.6 Given that no delivery vehicles were observed at all during the attended survey, it is considered that the expected number of vehicles is significantly below the number whereby a change in the ambient noise level might be expected to be observable. Potential vehicle noise for the proposed extended hours would therefore be classified as having a **No Observable Effect Level (NOEL)**.



Store Noise

7.2.7 The only example of store noise observed was the closing of the grated metal roller shutter at night. Although existing maximum noise levels within the area are already measured to exceed this, (70 dB(A)), and the overall level would likely be lower than 45dB L_{Amax} within residential rooms of the hotel (as recommend in BS 8233 and ProPG criteria), this could potentially be audible within rooms. This would be best addressed via a Noise Management Plan.

7.3 Plant

7.3.1 Subjectively the plant was not audible at ground floor level during the survey.

7.3.2 Data from the unattended survey shows two clear drop off in plant noise, one at 01:00 and one at 03:15.

7.3.3 A BS 4142 assessment for plant noise is given below:

Results		Relevant BS4142 clause	Commentary
Measured Sound Pressure Level of plant (at distance of 1m)	67 dB(A)	7.3.1	Sound pressure level measured close to the loudest item of the plant. Referred to as the “ambient” sound in 4142 terminology
Residual sound level	N/A	7.3.3	Sound level measured at same position as ambient sound, when the existing fixed plant item is switched off
Specific sound level (at a distance of 1m)	67 dB(A)	7.3.4	Calculated by removing residual noise from the measured plant noise <i>Given the proximity of the measurement to the plant item, no correction has been taken into account (allowing for a worst case scenario).</i>
Calculated Sound Power Level	82 dB(A)		Calculated sound power level from the measurement at 1m.
Specific sound level at receiver (25 Meters)	49 dB	7.3.4	Calculated level at the closest residential window (25m away) assuming quarter-spherical spreading from a point-source
Screening Correction	- 0 dB		No screening correction is applied due to a direct line-of-sight
Background sound level	$L_{A90,15min} = 54$ dB	8.3	Minimum background sound level measured <u>when the plant was switched off</u> between 03:15 and 06:00.
Acoustic feature correction	+ 0 dB	9.2	No obvious tonality penalty
Rating level	49 dB	9.2	Sound level at 1m from residential, calculated from source measurements, and taking into account the acoustic feature correction and the barrier correction.
Excess of rating over background sound level	(49 – 54) = -5 dB	11	Taking into account the worst case scenario



BS 4142 Assessment	- 5	11	The rating is calculated to be compliant with the criteria at all times, since this has taken into account the worst case scenario.
Uncertainty of the assessment	± 1 dB	10	<i>The measurements were taken under repeatable conditions and therefore the uncertainty of the result will be low. However, the uncertainty has been determined from variability in noise levels measured affected by road traffic noise, which is likely to fluctuate.</i>

Table 5: BS4142:2014 Table for plant noise assessment

- 7.3.4 The conclusion of the assessment was a rating level of -5 dB. Plant noise is calculated to be lower than the existing background noise level, and it is considered that it could be left to run through the night at its measured capacity, whilst having no impact on the closest residential receptors, and therefore this is indicative of **No Observable Effect Level (NOEL)**.

8 MITIGATION

- 8.1 The proposed extension of hours of the restaurant is expected to result in a level of impact equivalent to a NOEL; however, some proactive mitigation advice is given in this report to minimise risk as far as is practicable.
- 8.2 **People:** A premises noise management plan (Appendix B) is to be implemented, which embeds taking proactive best practice steps to further reduce the potential for noise impact on the residential properties. This is considered to be advisory to minimise the risk of noise from people, and in case of antisocial behaviour, and could be included as an Informative to any permission. The noise management plan is considered absolutely necessary to prevent hypothetical noise, and it is considered that, if implemented effectively, it has potential to do just that.
- 8.3 **Vehicles:** N/A
- 8.4 **COD:** N/A
- 8.5 **Plant:** It is recommended that the extract system is not set to run any higher than it is running currently; it is recommended that the current setting is set as a limit. Appendix D provides more information on extract running speeds based on data measured at other stores for typical plant noise.
- 8.6 By implementing these mitigation recommendations any extension to the hours of operation is considered to result in an acceptable level of noise impact, which is considered to implement the aims of the national Noise Policy Statement for England (2012) and the NPPF aims to protect residential quality of life whilst balancing the burden on business.



9 NOISE IMPACT ASSESSMENT SUMMARY

- 9.1 Based on the assessments above the significance of the impact from noise from each source in turn is summarised below for the case of no mitigation, with regard for the Noise Policy Statement for England 2010, and therefore the NPPF:

Effect Threshold	Subjective / Objective Assessment levels at 3m in-front of residential façades			
	People	Vehicles	COD	Roof Plant
Significant observable adverse effect (SOAEL)				
Lowest observable adverse effect level (LOAEL)	✓			
No observable effect level (NOEL)	✓	✓	✓	✓

Table 0: Noise Significance Impact Thresholds for extending hours of operation of the drive thru and in store eating services (in green after suggested mitigation)

- 9.2 Best practice measures are recommended to keep noise impact at minimum, should an extension be granted.
- 9.3 For plant and people noise, proactive mitigation recommendations have been made and it is considered that the evidence supports this application on noise grounds and the premises noise management plan delivers an overall enhancement to the existing quality of life of residents, as encouraged by the national policy.



10 CONCLUSION

- 10.1 A noise impact assessment has been completed by Sustainable Acoustics Ltd. at the McDonald's located at Piccadilly Gardens M1 1LY, based on the possibility of extending the opening hours of the restaurant to operate until 02:00.
- 10.2 The assessment was completed using a combination of attended and unattended measurements between 23:00 - 06:30 the 3rd – 4th November 2021.
- 10.3 The assessment shows that there is currently no hard evidence that there would be any impact in terms of noise due to the existing environment of the area, which is vibrant and noisy; though in anticipation of a worst-case scenario, a noise mitigation plan is considered necessary.
- 10.4 With an appropriate noise mitigation plan, the noise impact in terms of plant and people noise would be considered to have no observable impact on residences (NOEL), and therefore be unlikely to cause any impact on the nearby amenity, with no mitigation needed.
- 10.5 A premises noise management plan (PNMP) at Appendix C is proposed, which if implemented is extended to proactively minimise any potential risk of noise resulting from antisocial behaviour. This is a precautionary measure as no ASB was observed to be directly linked to McDonalds during the survey, and the risk of it considered to be low.



APPENDIX A

Acoustic Spot Measurements and Observations



File number	Time	Duration (mm:ss)	L _{Aeq}	L _{Amax}	L _{A90}	L _{eq}								Position	Remarks
						63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		
1	23:00	10:00	66.9	93.7	58.0	69.7	64.1	61.7	61.5	58.3	55.2	63.3	41.5	1	Tram movements – squeaky rails. Sweeper on road. Forklift and bleeping throughout. Bus on road and regular traffic. Horn from forklift. Sweeper moves to back of square. Voices everywhere in square, lots of pedestrians.
2	23:11	10:00	64.6	88.0	57.8	68.9	62.7	64.9	61.0	58.4	57.4	53.6	48.2	2	Sweeper at rear of square. Squeaky tram. Large queue for McD. Some shouting from square; some singing/chanting too. Sweeper moves past McD. Forklift makes up background noise. Tram movements continue regularly.
3	23:21	00:16	68.5	78.2	60.7	76.6	68.5	64.9	68.2	63.2	56.0	54.7	50.2	2	Tram movement
4	23:46	02:01	65.0	79.7	58.4	71.7	64.9	61.2	61.0	60.3	57.2	56.1	41.6	1	McD still busy. Background is forklift arranging event in square. Noisy people leave McD. Some truck horns on road. Trams frequently come and go.
5	23:49	02:12	60.6	70.9	57.1	68.2	61.0	59.0	57.5	55.5	53.1	50.1	38.9	2	Tram in. Forklift in bg.
6	23:59	03:01	60.7	75.5	54.6	68.1	61.2	57.8	57.0	54.3	55.4	48.8	38.8	1	McD closing – people leave. Trams and buses continue to operate and contribute significantly to noise levels. Far fewer people about.
7	00:02	06:00	57.1	77.8	51.8	63.5	57.0	54.2	54.4	52.1	49.5	45.6	37.9	1	Tram audible at back of square. McD gate slams closed.
8	00:08	10:00	62.4	74.9	52.8	66.6	61.2	60.9	57.3	55.1	55.0	54.0	53.9	2	Noisy truck at rear of square. Leaves 1:30 into measurement. Fairly quiet site. Trams arrive and



File number	Time	Duration (mm:ss)	L _{Aeq}	L _{Amax}	L _{A90}	L _{eq}								Position	Remarks
						63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz		
															leave. Sweeper back on road, enters precinct by McD. Trams audible in background/distance.
9	05:27	10:00	58.7	79.2	51.5	68.0	61.1	58.2	56.2	54.0	50.2	43.7	34.8	1	Tram toot and away. Buses on road – bus back of square heard revving. Trams and buses.
10	05:38	10:00	57.1	74.6	50.3	64.7	58.9	56.6	54.0	53.0	47.6	44.4	37.6	2	B/g noise is from an advertising board – fan? Trams continue. Distant plane. Electric milk van past.
11	06:03	10:00	60.0	74.0	52.4	68.3	61.2	57.6	55.3	54.9	54.3	46.9	37.5	1	Trams and buses continue to dominate noise in area.
12	06:15	00:41	63.9	70.7	58.8	74.2	66.2	61.9	58.3	59.1	57.9	51.1	40.6	2	Short measurement of a tram leaving, and another arriving.
13	06:16	10:00	60.3	78.7	53.5	68.7	61.5	58.5	56.7	55.0	54.0	46.3	39.9	2	Squeaky noise from trams. 3 buses on road at once, all idling.
14	06:30	10:00	61.2	79.2	54.7	69.4	61.5	58.9	58.2	55.8	53.7	51.0	40.5	1	Window cleaner van past. Several trams and buses
15	06:42	10:00	63.8	80.4	56.9	70.4	63.5	61.1	58.3	57.1	59.5	50.4	40.7	2	Alarm going off at side of square. Very few customers. Buses and trams dominate.
16	07:05	01:00	64.0	65.9	63.4	67.1	72.2	68.3	59.2	54.3	50.2	40.8	34.3	Roof	Kitchen extract, middle of roof
17	07:07	01:00	66.9	68.5	66.2	64.4	69.8	73.2	59.7	52.3	47.3	40.7	33.5	Roof	Kitchen extract at 1m



APPENDIX B

Policies and Standards



NATIONAL PLANNING POLICY FRAMEWORK

Current planning policy is based on the National Planning Policy Framework (NPPF), revised in July 2021, which supports a presumption in favour of sustainable development, unless the adverse impacts of that development would outweigh the benefits when assessed against the policies in the Framework, taken as a whole.

The noise implications of development are recognised at paragraph 185, where it is stated that planning policies and decisions should:

- *“mitigate and reduce to a minimum potential adverse impact from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life⁶⁵”*
- *“Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason”*

Noise Policy Statement for England

Paragraph 185 of the NPPF also refers to advice on adverse effects of noise given in the Noise Policy Statement for England¹ (NPSE). This document sets out a policy vision to

“Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development”.

To achieve this vision the Statement sets the following three aims:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *avoid significant adverse impacts on health and quality of life*
- *mitigate and minimise adverse impacts on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life.*

The following descriptive terms are implemented in the NPSE:

No observed effect level (NOEL): this is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Lowest observed adverse effect level (LOAEL): this is the level of noise exposure above which adverse effects on health and quality of life can be detected.

Significant observed adverse effect level (SOAEL): This is the level of noise exposure above which significant adverse effects on health and quality of life occur.

National Planning Policy Guidance on Noise (July 2019)

This guidance is consistent with the policy within NPSE. The newly refreshed guidance says *“Good acoustic design needs to be considered early in the planning process to ensure that the most appropriate and cost-effective solutions are identified from the outset”.*

¹ Department for Environment, Food and Rural Affairs, *Noise Policy Statement for England*, London, 2010



It also say noise can override other planning concerns, where justified, *“although it is important to look at noise in the context of the wider characteristics of a development proposal”*.

It makes clear that *“As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy”*.

The guidance provides the following “Noise Exposure Hierarchy Table”:

Response	Examples of outcomes	Increasing effect level	Action
NO OBSERVED EFFECT LEVEL			
Not present	No Effect	No Observed Effect	No specific measures required
NO OBSERVED ADVERSE EFFECT LEVEL			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
LOWEST OBSERVED ADVERSE EFFECT LEVEL			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
SIGNIFICANT OBSERVED ADVERSE EFFECT LEVEL			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent



Local Policy

Manchester City Council is the relevant local authority. The Manchester Local Plan Core Strategy (2012) is the relevant policy document. The proposal is for night time refreshment including takeaway from the restaurant and drive-thru, so policy C10 should apply to it. Policy C10 is reproduced below for reference. The requirements of Policy C10 are similar to those of national planning policy.

Policy C 10

Leisure and the Evening Economy

New development and redevelopment that supports the evening economy, contributes to the vitality of district centres and supports a balanced and socially inclusive evening/night-time economy will be permitted, subject to the following considerations:

1. Cumulative impact – in areas where there is already a concentration of bars (A4), hot food takeaways (A5) and other night-time uses which are detrimental to the character or vitality and viability of the centre, there will be a presumption against further facilities.
2. Residential amenity – the proposed use should not create an unacceptable impact on neighbouring uses in terms of noise, traffic and disturbance.
3. Balance - new uses in Manchester centres should support both the day-time and evening/night-time economies whilst not undermining the role of the primary shopping area.

When considering the impact of a proposed bar or hot food take away regard will be had to the above policy and also:

- The existing number of similar establishments in the immediate area and their proximity to each other;
- The type and characteristics of other uses, such as housing, shops and public houses;
- The existence of vacant shop units and the condition of the unit;
- The importance of the location for local shopping, and the number, function and location of shops that would remain to serve the local community;
- The character of the centre and its frontage, and the nature of the use proposed;
- The potential impacts of the proposal on the wider community; and
- Any known unresolved amenity, traffic or safety issues arising from existing uses in the area.



British Standard BS 4142: 2014

The British Standard BS 4142: 2014, *Methods for rating and assessing industrial and commercial sound* is an update of the previous edition of the standard, and describes methods for rating and assessing sound of an industrial and/or commercial nature, to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident. The sound from the industrial/commercial source is rated by taking into account the sound level of the source, known as the specific sound level, and its characteristics, such as tonal, impulsive or intermittency of the source, and applying an appropriate correction to give the rating level of the sound source. To gain an initial estimate of the potential impacts of the sound source, it is compared to the background noise level, and the level by which the rating level exceeds the background noise level indicates the following potential impacts:

Difference	Assessment
Around 10 dB or more	Likely to be an indication of a significant adverse impact, depending on the context
Around 5 dB	Likely to be an indication of an adverse impact, depending on the context
0 dB or less	An indication of the specific sound source having a low impact, depending on the context

The standard states that “where an initial estimate of the impact needs to be modified due to the context, take all pertinent factors into consideration, including the following:

- 1) *The absolute level of the sound*
- 2) *The character and level of the residual sound compared to the character and level of the specific sound*
- 3) *The sensitivity of the receptor*”

The standard also requires an indication of the uncertainty of the assessment made.

British Standard BS 8233: 2014

The British Standard BS 8233: 2014, *Guidance on Sound insulation and noise reduction for buildings* provides additional guidance on noise levels from sources without specific character in the built environment, based on the recommendations of the World Health Organisation. The criteria desirable levels of steady state, “anonymous” noise in unoccupied spaces within dwellings, from sources such as road traffic, mechanical services and other continuously running plant, are tabulated below:

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq, 16 \text{ hour}}$	-
Dining	Dining room/area	40 dB $L_{Aeq, 16 \text{ hour}}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq, 16 \text{ hour}}$	30 dB $L_{Aeq, 8 \text{ hour}}$



It is noted, however that where development is considered necessary or desirable, despite external noise level above WHO guidelines, the above target levels may be relaxed by up to 5 dB.

The standard also recommends that for traditional external amenity areas, such as gardens, it is desirable that external noise levels do not exceed 50 dB $L_{Aeq,T}$, and that 55 dB $L_{Aeq,T}$ would be acceptable in noisier environments. However, it is recognised that these values may not be achievable in all areas where development is desirable, and in such locations, development should be designed to achieve the lowest practicable levels.

ProPG

Professional Practice Guidance on Planning & Noise: New Residential Development, published May 2017 by a Working Group of the Institute of Acoustics, Association of Noise Consultants and Chartered Institute of Environmental Health to provide guidance on the approach to the management of noise within the planning system in England. Whilst it is not an official government code of practice, it is endorsed by the appropriate professional bodies and reflects the NPSE, NPPF and Planning Practice Guidance. It is restricted primarily to the consideration of new residential development that will be exposed to transportation noise sources.

ProPG advocates consideration of noise at an early stage and good acoustic design to produce sustainable development. Design target noise levels are based on BS 8233: 2014 with additional guidance on individual noise events at night, how windows and ventilation should be assessed and how the assessment should be considered where target noise levels may be difficult to achieve.

The criteria for the ProPG Stage 1: Initial Site Risk Assessment are reproduced overleaf.

Note also that Appendix A para A.19: "A site should be regarded as high risk where the $L_{Amax,f}$ exceeds or is likely to exceed 80 dB more than 20 times per night."

As an additional note to the final comment at the bottom of Figure 1; NOTE 4 in Figure 2 with ProPG guidance gives the following advice in relation to maximum noise levels: *"In most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night."*

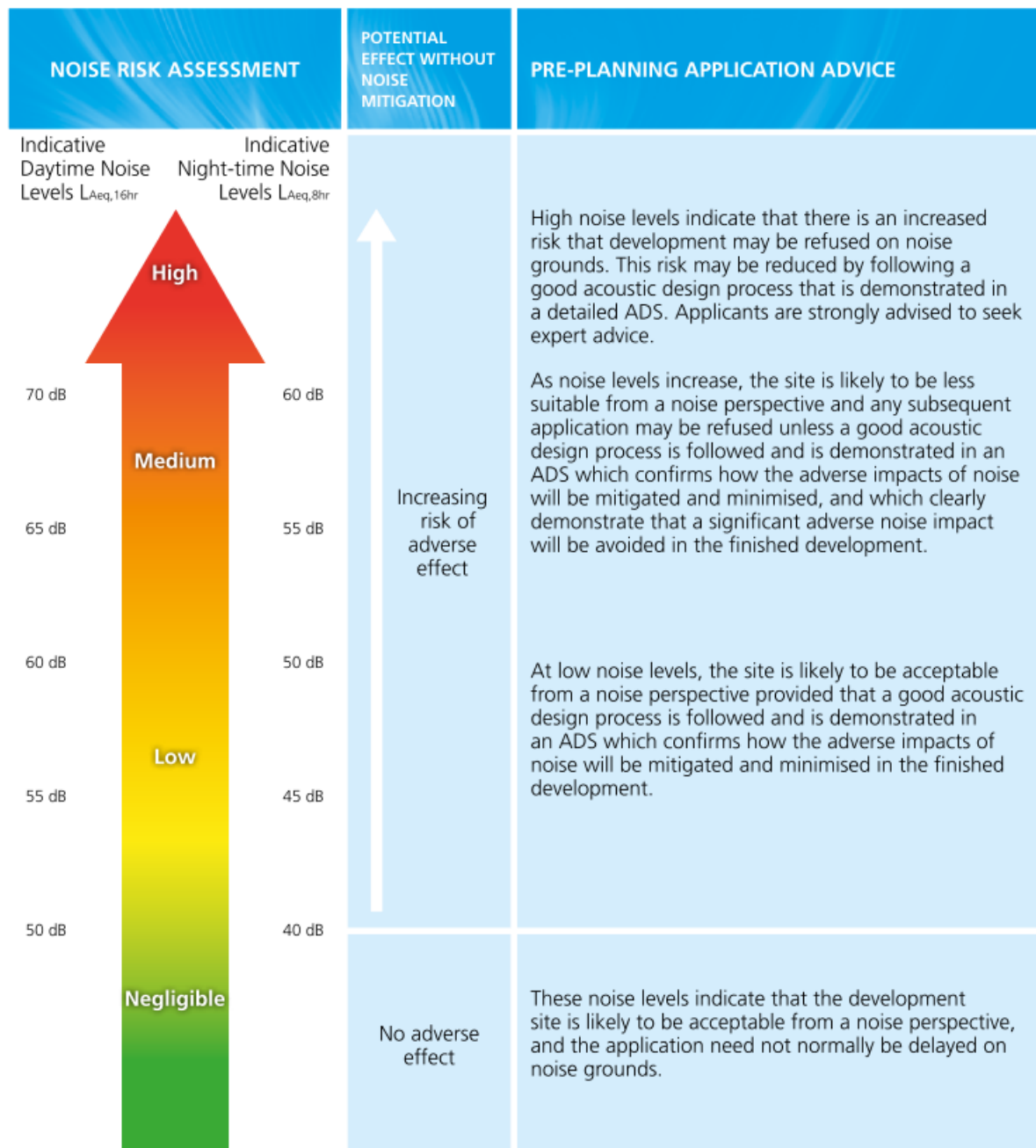


Figure 1 Notes:

- Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is "not dominant".
- $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.
- An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.

Figure 1. Stage 1– Initial Site Noise Risk Assessment



APPENDIX C

Premises Noise Management Plan



PREMISES NOISE MANAGEMENT PLAN (PNMP) : PICCADILLY GARDENS (#1480)

The following measures **must be implemented after 11pm**, as part of a proactive management effort to minimise the noise impact cause to nearby residents, created by the operation of the premises, and its customers when inside or in the vicinity of the premises.

These measures include :

Noise Source	Control measure
1. Minimising antisocial behaviour noise (eg. Loud music)	Staff shall be vigilant for customers that arrive and have either loud music playing, or where the individuals are deliberately creating noise. Observational records should be made of in the Incident log where possible, and CCTV footage used to provide evidence of culprits whom regularly cause antisocial behaviour. Where these are substantial examples then these should be supplied to the authorities with a copy of the noise log. Delivery drivers should be encouraged to switch engines off when not in use. <u>Members of the management team, who are properly trained are required to quickly and safely challenge those creating unreasonable noise levels and request them to adjust their behaviour, to minimise noise and respect their neighbours. Information on those causing antisocial behaviour (ASB), should it continue, will be recorded as an incident and reported, when required to statutory authorities thereby and minimising and preventing the disturbance caused to neighbours as far as possible. For further information on McDonald's National Policy on ASB see the McDonald's Guidance for Managing Anti-Social Behaviour.</u>
2. People Noise	Signs shall be prominently displayed that ask customers that come into the premises to leave quietly in order to respect our neighbours. Signs should request that customers keep noise to a minimum, or may risk not being served. We will work in partnership with the police and other statutory authorities to address any nuisance or crime and disorder that generate noise outside the restaurant within the licence, which could include SIA guarding (Security Industry Authority) on a risk assessment basis to achieve, where it is expected to be necessary to control noise. Customers that are seen to be disregarding the notices and or loitering outside after 2300 and making noise should be encouraged to come inside if they are eating, rather than be outside, or move on. Where this becomes confrontational an ASB trained Manager will attend and have the power bar the person. <u>Gatherings of people who are not waiting to be served, should be challenged by the Manager, notified that they are on CCTV and recorded in the Incident log. Although rare where there is evidence of antisocial behaviour, of which significant levels of noise are part, information will be made available to the authorities. A phone number will be made available to residents to contact the store, to report evidence of ASB within the boundary of the premises.</u>
3. Intercom (COD) and other Noise	Not relevant at this store (#1480)

Approved Plan for Store No. : _____, Authorising person : _____, Signature _____

The cover features a vibrant green background with a large, stylized white and yellow wave graphic that curves across the middle. Within the upper part of this wave is a photograph of a McDonald's restaurant at night, with its illuminated signage and interior visible. In the bottom left corner, the McDonald's Golden Arches logo is displayed. The bottom right corner contains the title 'McDonald's Incident Book' in a bold, white, sans-serif font. A small line of copyright text is located at the very bottom left.

Name/s.....

Telephone Number/s.....

Email/s.....

Work Address.....

Name/s.....

Telephone Number/s.....

Email/s.....

Work Address.....

Name/s.....

Telephone Number/s.....

Email/s.....

Work Address.....

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APPENDIX D

Plant noise levels



Extract system - Variation of output sound levels with extract speeds

The noise level variation for different speeds has been measured at other McDonald's stores. The noise levels measured for the extract duct and the fan are shown below in Tables D1 and D2.

Speed (Hz)	Noise level measured dB(A)	Calculated sound power level (SWL)
25	63 - 64 *	71 - 72
30	67	75
35	70 - 71	78 - 79
40	73 - 75 *	81 - 83
45	76 - 79	84 - 87

Table D1. Noise levels at different speeds for the kitchen extract duct.

* Calculated level based on other measurements for that store.

Speed (Hz)	Noise level measured dB(A)	Calculated sound power level (SWL)
25	64 - 67 *	72 - 75
30	67 - 69	75 - 77
35	69 - 71	77 - 79
40	71.5 * - 73	80 - 81
45	74 - 75	82 - 83

Table D2. Noise levels at different speeds for the kitchen extract fan.

* Calculated level based on other measurements for that store.

Table D1 shows that the noise levels for the extract duct measured at different stores provide steps of **3 to 4 dB(A) per each 5 Hz setting variation**. Table D2 shows that the noise levels for the extract fan measured at different stores provide steps of typically 2dB(A) per 5Hz speed variation. It is likely that this is partially due to contribution from the extract duct noise. Therefore, the main output difference is from the extract duct rather than from the fan.

It was also possible to calculate the frequency spectrum trend for different speeds as shown in Figure D1 below. Note that for 25Hz and 40 Hz the frequency spectrum was only measured at one store, whereas for the rest of speeds the trend shows the logarithmic average of the different stores.

It is clear that for 30 Hz to 45 Hz settings, there is a trend showing possible tonality around 250 Hz. The spectral shape between 30 Hz, 40 Hz and 45 Hz settings is almost identical other than shifted up for the higher speed settings. However, the measurement for the speed setting of 25 Hz shows a different shape, where the possible tonality has shifted down to the 125 Hz octave band. Not many systems allow the 25 Hz setting, and therefore this data will be revised when there are more opportunities to measure other stores at the speed setting of 25 Hz.

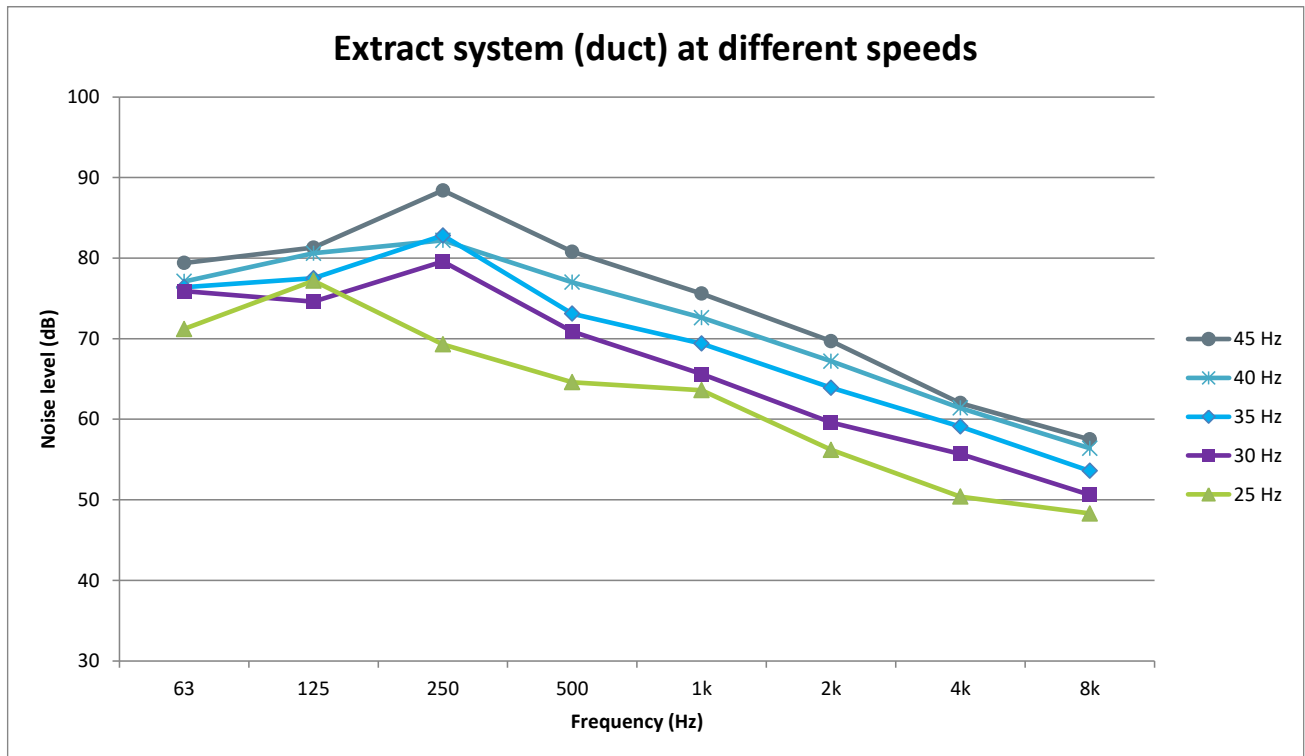


Figure D1. Frequency spectra for different speeds for the kitchen extract (duct).



APPENDIX E

McDonald's Guidance on Anti-Social Behaviour



McDonald's has launched national Guidance for Managing Anti-Social Behaviour, aimed to reduce the risk of ASB happening at McDonald's premises and to help store managers to know how to best manage Anti-Social Behaviour (ASB) if this happens and to do so safely and effectively.

The Guide defines ASB as *"behaviour likely to cause harassment, alarm or distress to one or more persons"*. The methods and tools described in the Guide have been summarised below:

- All restaurants should have a CCTV system installed that complies with McD minimum standards so it can be used for the purposes of monitoring as well as identification and able to do so in low light.
- Body worn cameras (BWC) are not recommended and at restaurants belonging to McOpCo are not permitted to managers or employees.
- Detecting and preventing ASB:

Loitering: groups of people hanging around can increase the risk of ASB and therefore if an individual or a group is perceived to be loitering, it is recommended to approach them in a safely and effective way (method described on the Guide) in order to dismiss the groups or individuals.

Drug misuse: a list of indications is provided so staff can identify possible problems and for the management team to deal with the problem. A list of tactics that can be implemented to prevent the issue is also provided.

Staff Safe AV: alarm system that helps raise an alert to a monitoring station so an operator can connect to see and hear what is happening. The system consists of a control panel and six activation buttons (3 mobile units, 1 for staff working outside, 1 on the control panel) and is capable of announcements by pressing the control panel activation button, there will be an announcement to tell customers that the premises are externally monitored. The system is also capable of recordings, and these recordings are kept at the Call Centre anytime an audio activation is made. These recordings can be useful as evidence for the Police. An external speaker could be fitted when the restaurant is in a non-residential area, if approved by a Licensing Officer or the Local Authority. This would allow to make announcements from inside the premises to inform individuals or groups outside.

- Use of tools such as classical music, stop free WiFi service and power to charging points inside: Playing classical music inside the store, groups of teenagers will tend not to want to stay at the premises and therefore they will leave as soon as they finish eating. It is suggested that some individuals or groups might stay longer than necessary at the restaurant to use the free WiFi and charging points. Although it is desirable for customers to enjoy their stay, it is also desirable to deter loitering that could lead to ASB in or around the premises. Therefore, by temporary suspension of the WiFi and charging points facilities, groups are likely to willingly mobilise.
- Partnership with Police and other forces is encouraged and provides a proactive commitment to trying to manage ASB. Radio Links help the Franchisees and Managers build relationships with the Police and other businesses including Shop Watch, Pub Watch and Retail Radio Links initiatives. The restaurant management team should attempt to deal with issues in the restaurant, however, if there is a persistent problem, the option of using guarding policy should be assessed for the required time.
- Reporting and tracking incidents allows issues to be identified and create plan actions to address them. The process of reporting is explained in detail on the Guide for both crime and ASB.



- As a last resource, it is possible to ban specific people that have caused an issue. This should only be applied when all other resources to stop the problem have not been effective and should always be done with support of an external partner, ideally the local Police.

Note: the use of a mosquito devices was identified as one commercially available way to disperse groups of young people, however, this is not recommended as it introduces another noise source that could cause annoyance to other in the vicinity, especially children or animals with more sensitivity to high frequency.

Two main step guides are also provided in the document:

- **ASB Incident Management: 5 Step Method for Managers**
 1. Approach and ask for the behaviour to stop, explain that if the behaviour does not change they will need to leave the premises
 2. If the behaviour continues, explain that they need to leave the premises. Dialog should be kept at a minimum. If they do not leave, explain that further action will be taken.
 3. If they have not left, ask again and explain that the assistance button is going to be used, which would take CCTV footage and pass it to the police and it could result in a ban from the restaurant and other prosecution from the police. If they still not leaving, Staff Safe takes over and there is no more dialog between the member of staff and the person or group.
 4. Staff Safe Operator will contact the police and will stop the dialog with the person or group
 5. It is likely that the person or group leave before the police arrives, however, an overview together with the incident log book and CCTV footage should be provided to the Police. If an individual results to be banned from the restaurant, it is crucial to enforce it at all times.
- **ASB Incident Management: 7 Point Plan – Post ASB Incidents Actions**
 1. All incidents should be recorded in the Incident Log
 2. Shift Manager should take a picture from CCTV footage of the individual and attach it to the Incident Log
 3. Monthly review of the Incident Log at Manager's meeting. Banning letters should be given to the Police.
 4. The Police is encouraged to issue the Banning Letter through a home visit
 5. Reasons for banning:
Instant Ban: due to aggressive, abusive, threatening behaviour or damage to property
Yellow Card: issued for less significant incidents, three yellow cards would result on a Ban.
 6. Monthly review of Incident Log and Banning Letters, preferably with the Police.
 7. Advise other McDonald's in the area of banned individuals.