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MCFC North Stand Expansion

Noise impact assessment (City Square)

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Version	Date	Comments	Author	Reviewer
A	7 Nov 25		JP	JA
B	26 Nov 25	Updated following changes to loudspeaker locations	JP	JA
C	5 Dec 25	Minor updates	JP	JA
D	17 Dec 25	Minor updates following comments from Deloitte	JP	JA
E	23 Mar 26	Updated following client feedback	JP	JA

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Summary

Sandy Brown has been commissioned by John Sisk & Sons Ltd to undertake an assessment of external amplified sound impact associated with the use of the new covered outdoor fan area (City Square).

Planning Conditions 35 and 36 (Planning ref 136763/FO/2023) require details of the uses of the new external areas associated with the North Stand expansion and currently prohibit any external amplified sound.

MCFC wish to use the new covered outdoor area on non-match days for uses such as screening away matches, fitness classes, film screenings, screening sports events such as Wimbledon and live music events. Indicative noise levels have been provided for each activity by MCFC.

To evaluate any changes in the baseline noise levels since the recent openings of Co-op live arena and Canalside cafe bar, an environmental noise survey has been carried out. The survey included attended noise measurements outside the nearest noise sensitive premises. The representative background noise level measured during the survey was $L_{A90,15min}$ 53 dB.

Based on the entertainment noise egress criteria stipulated by Manchester City Council, limits have been set for entertainment noise egress on non-match days, to be 5 dB below the background noise level is octave bands outside the nearest residential receptors.

A highly directional PA system is proposed to maximise the sound levels within City Square, whilst minimising noise egress to the residential receptors outside the MCFC development.

It is recommended that localised limitations for the sound levels produced by the City Square PA system be established through commissioning / verification testing, whilst ensuring compliance with the limits in Table 4.

It is proposed by MCFC that the PA system levels will be managed and controlled through an operational noise management plan rather than use of electronic limiters to reduce negative impact on sound quality.

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1 Introduction

Sandy Brown has been commissioned by John Sisk & Sons Ltd to undertake a noise impact assessment of amplified noise within the covered outdoor fan area, City Square, located between the commercial block and hotel block of MCFC north stand expansion.

Planning Condition 35 and 36 (Planning ref 136763/FO/2023) require details of the uses of the new external areas associated with the North Stand expansion and currently prohibit any external amplified sound.

MCFC wish to use the new covered outdoor area on non-match days for uses such as screening away matches, fitness classes, film screenings, screening sports events such as Wimbledon and live music events. A noise impact assessment is required for such uses for submission to MCC and is detailed within this report.

The use of the amplified noise within covered outdoor fan areas on match days was considered by the approved ES noise and vibration chapter at planning stage, and should therefore not be subject to the limitations set out within Planning Conditions 36 and 37 (Planning ref 136763/FO/2023), though this is subject to agreement with Manchester City Council.

Since the last environmental noise survey was carried out, Co-op Live and a new external bar, Canalside, have opened. A new survey has been undertaken to establish the latest baseline conditions.

2 Site description

2.1 The site and its surroundings

The site location in relation to its surroundings is shown in Figure 1, with the noise sensitive receptors identified as part of *Chapter 11 of the Environmental Statement: Volume 1* from the original planning application (Planning ref 136763/FO/2023). The site is bounded by Alan Turing Way (A6010) to the west, Ashton New Road (A662) to the south and the Metrolink tramline to the north and west.



Figure 1 Aerial view of site (courtesy of Google Earth Pro)

The nearest noise sensitive residential receptors have been identified as part of the original Environmental Statement, dated April 2023, and are summarised below:

- Residential premises located at 6 Cromarty Walk, approximately 380 m southwest of the City Square, highlighted in yellow
- Residential premises located at 12 Biscay Close, approximately 380 m south of the City Square, highlighted in green
- Residential premises located at 2b The Waterfront (The Cube), Gibbon Street, approximately 260 m east of the City Square, highlighted in red
- Residential premises located at 2 Stuart Street (The Drum), approximately 270 m east of the City Square, highlighted in blue

An additional noise sensitive receptor has also been identified and is included in this noise impact assessment due to its proximity to the North Stand expansion:

- Residential premises located along Alan Turing Way, approximately 270 m east of the City Square, highlighted in orange.

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3 Entertainment noise egress criteria

3.1 Planning Conditions 35, 36 and 37 (Planning ref 136763/FO/2023)

Planning Condition 35 states the following in regard to entertainment noise:

"No amplified sound or any music shall be produced or played in any part of the site outside the building"

Planning Condition 36 states the following in regard to entertainment noise:

"Prior to the first use of the commercial uses within the development, a schedule of opening hours shall be submitted for approval in writing by the City Council, as Local Planning Authority. The approved hours shall then be implemented and thereafter the uses shall operate in accordance with them.

There shall be no amplified sound or any amplified music at any time within these spaces unless it can be shown as part of condition 37 that there would be no unacceptable impact on residential amenity."

While Planning Condition 35 states that outdoor amplified music is prohibited, Planning Condition 36 states that amplified sound or music may be permitted providing that it is shown that there was no unacceptable impact on residential amenity. Planning Condition 37 states Manchester City Council's entertainment noise guidance, which is detailed below.

3.2 Local authority criteria

Manchester City Council (MCC) states the following in regard to entertainment noise for a new entertainment venue that is structurally detached from other building, assuming that the residential properties in question have their windows open:

'Entertainment noise ($L_{Aeq,5min}$) should be controlled to 5dB below the typical background noise level (L_{A90}) in each octave band at the nearest noise sensitive location'.

MCC guidance also states that the following may be applicable for a new entertainment venue:

- A suitable noise limiting device may be necessary to install
- Music noise levels in the 63Hz and 125Hz octave centre frequency bands (L_{Aeq}) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB ($L_{Aeq,5min}$), respectively.

3.3 Discussion

This report sets out an assessment of entertainment noise egress from the outdoor fan area activities on non-match days.

The use of the outdoor fan areas on match days was considered by the ES noise and vibration chapter at planning stage, and should therefore not be subject to the limitations set out within Planning Conditions 36 and 37, though this is subject to agreement with Manchester City Council.

4 Development proposals

MCFC wish to use the new covered outdoor area on non-match days for uses such as screening away matches, fitness classes, film screenings, screening sports events such as Wimbledon and live music events. The outdoor fan area is located between the hotel and commercial buildings to the north of the stadium, as highlighted in yellow in Figure 2.

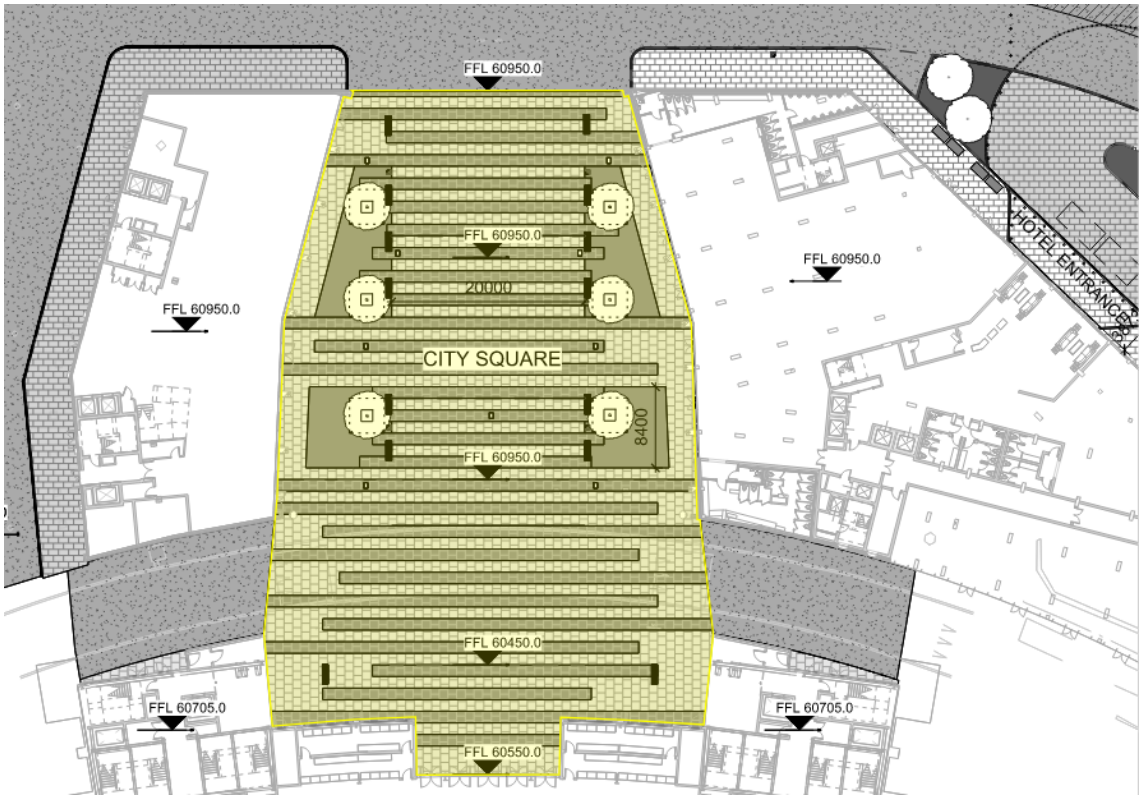


Figure 2 Proposed area to be used for daytime non-match day events

The outdoor fan area is partially enclosed, as it is covered with a solid ETFE roof, and enclosed on 3 sides in plan by the north stand expansion building massing, as shown in Figure 3 highlighted in yellow.

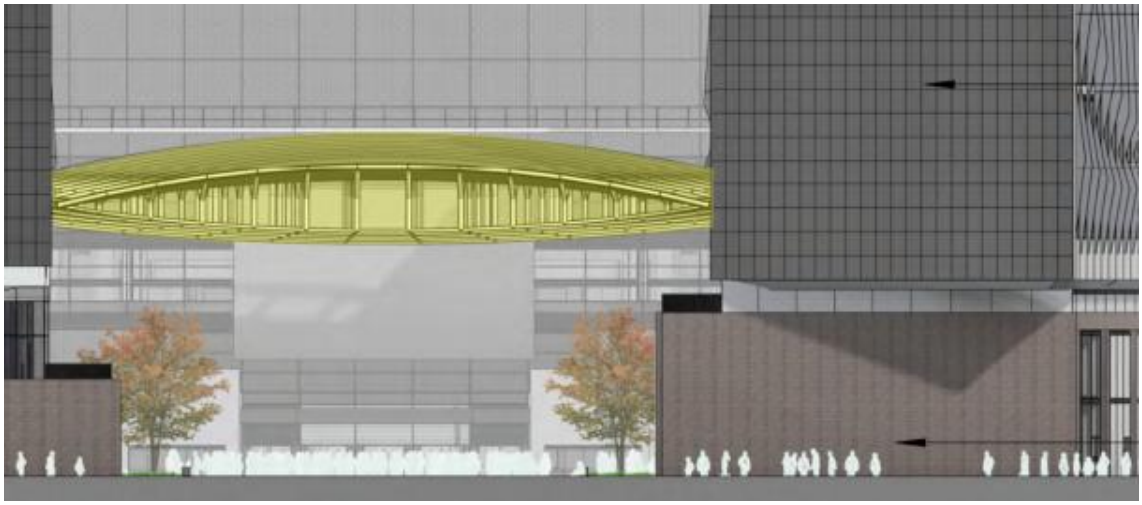


Figure 3 City Square covered by solid ETFE roof (highlighted in yellow)

Only the north side of the fan area is open to the environment.

An indicative typical schedule has been proposed for events during different times of year. This schedule includes outdoor events, which are highlighted in red in Figure 4, which is an excerpt which shows the most events taking place in City Square.

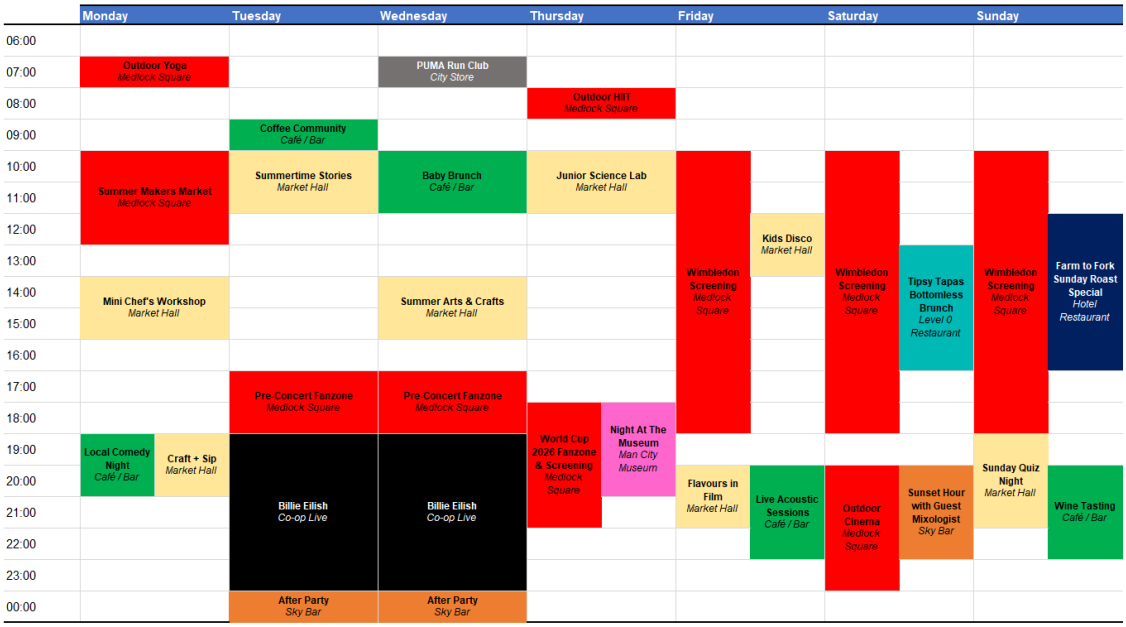


Figure 4 Excerpt from indicative proposed schedule for outdoor events

As a guide, the expected entertainment noise levels associated for each type of activity MCFC wish to host in City Square has also been provided and is summarised in Table 1.

Table 1 Expected noise levels from proposed events

Activity	Typical entertainment sound pressure level within City Square at audience / participant location
Daily background music	L_{Aeq} 62–68 dB
Yoga class	Amplified speech level: L_{Aeq} 65–68 dB. Background music: L_{Aeq} 55–60 dB
Away-match screening	Amplified speech level: L_{Aeq} 72–78 dB, with match feed peaks L_{Fmax} 88–90 dB DJ during 'hype moments': L_{Aeq} 80–85 dB with L_{Fmax} 92–95 dB
Film screening	Dialogue-led film: L_{Aeq} 68–74 dB, L_{Fmax} 80–82 dB Action feature film: L_{Aeq} 72–78 dB, L_{Fmax} 85–90 dB
Live music	L_{Aeq} 92–96 dB, L_{Fmax} 100–103 dB
Wimbledon all-day screening	Match feed L_{Aeq} 65–70 dB, L_{Fmax} 78–80 dB

5 Noise survey

5.1 Attended measurement method

To evaluate baseline noise levels since the opening of Co-op live arena and Canalside cafe bar. The survey included attended noise measurements at the nearest noise sensitive premises.

The measurements and information provided in this report are in accordance with requirements of BS 7445, as referenced in Appendix A.

The measurements were taken over 15-minute periods between 18:15 and 22:00 on 28 October 2025.

Attended sample measurements were taken between 18:15 and 22:00 on 28 October 2025 at the location indicated in Figure 1, as Position 1. This is considered a suitable location for residential premises at 2 Stuart Street (The Drum) and 2b The Waterfront (The Cube), Gibbon Street. All measurements were 15 minutes in duration.

At the measurement position the microphone was mounted on a tripod approximately 1.5 m above the ground level and approximately 1 m from any other reflective surface.

Details of the equipment used and the noise indices measured are provided in Appendix A.

Dominant noise sources occurring during the measurements were noted.

A photograph of the measurement position is shown in Figure 5.



Figure 5 Photograph showing the attended measurement position

5.2 Weather conditions

Weather conditions during the survey are described in Appendix A.

Wind speeds reached speeds of up to 3 m/s and light rain occurred during measurements however there were no indications of increased noise levels. As such, the measurement results are considered suitable.

5.3 Results

Noise levels and key sources recorded during the attended measurements are summarised in Table 2. Attended measurements were carried out at approximately 1 m from a reflective surface and considered facade measurements.

Table 2 Noise levels and key noise sources from attended measurements

Position	Start time	Sound pressure levels (dB)			Noise sources
		$L_{Aeq,5min}$	$L_{AFmax,5min}$	$L_{A90,5min}$	
1	18:15	65	92	55	Traffic noise egress along Alan Turning Way. Less significant contributions were noted from aircraft passing overhead, pedestrians passing talking loudly and occasional distant fireworks. The maximum level likely due to sirens from emergency services vehicles moving past measurement position.
	18:30	70	99	55	As above. The maximum level likely due to sirens from emergency services vehicles moving past measurement position.
	18:45	61	74	53	As above. The maximum level likely due to horns from vehicles moving past measurement position.
	19:00	60	69	54	As above. No notable maximum sound level events.
	20:00	61	72	53	As above. No notable maximum sound level events.
	20:15	62	75	53	As above. No notable maximum sound level events.

Position	Start time	Sound pressure levels (dB)			Noise sources
		$L_{Aeq,5min}$	$L_{AFmax,5min}$	$L_{A90,5min}$	
	20:30	67	90	56	As above. The maximum noise level likely due to sirens from emergency services vehicles moving past measurement position.
	20:45	66	82	56	As above. No notable maximum sound level events.
	21:00	64	74	55	As above. No notable maximum sound level events.
	21:15	63	73	54	As above. No notable maximum sound level events.

Based on the results of the attended noise survey, the representative background level in octave bands is given in Table 3. This is used to inform the entertainment noise limits at the nearby noise sensitive receptors.

Table 3 Representative background sound pressure level

Background sound pressure level, L_{90} (dB) at each octave band centre frequency, Hz							
63	125	250	500	1k	2k	4k	8k
57	51	49	48	50	45	37	29

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6 Limits

Based on the above criteria and the measurement results, the cumulative noise level resulting from entertainment noise at 1 m from the worst affected windows of the nearest noise sensitive premises should not exceed the limits set out in Table 4.

No entertainment noise is proposed at night (23:00-07:00).

Table 4 Spectral entertainment noise egress limits at 1 m from the nearest noise sensitive premises

Maximum sound pressure level at 1 m from noise sensitive premises, $L_{eq,5min}$ (dB) Octave band centre frequency, Hz								Total
63	125	250	500	1k	2k	4k	8k	
52	46	44	43	45	40	32	24	48

Music noise levels in the 63 Hz and 125 Hz octave centre frequency bands to be controlled to ensure $L_{Aeq,5min}$ 47 dB and 41 dB respectively are not exceeded in habitable rooms. This is expected to be achievable with the limits set out above.

The above limits are inclusive of any instrumentation.

7 Compliance

Initial calculations have been carried out which indicate that compliance with the criteria should be feasible for all but the noisiest events, where it is predicted that a reduction in the desired sound levels will likely need to required to ensure compliance.

A highly directional PA system is proposed to maximise the sound levels within City Square, whilst minimising noise egress to the residential receptors outside the MCFC development.

It is recommended that final limitations for the sound levels produced by the City Square PA system be established through commissioning / verification testing, to ensure compliance with the limits in Table 4.

It is proposed by MCFC that the PA system levels will be managed and controlled through an operational noise management plan rather than use of electronic limiters to reduce negative impact on sound quality.

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8 Conclusion

Sandy Brown has been commissioned by John Sisk & Sons Ltd to undertake a noise impact assessment of amplified noise within the outdoor fan area, City Square, located between the commercial block and hotel block of MCFC north stand expansion.

Planning Condition 35 and 36 (Planning ref 136763/FO/2023) require details of the uses of the new external areas associated with the North Stand expansion and currently prohibit any external amplified sound.

It is however understood that MCFC wish to use the new outdoor area on non-match days for uses such as screening away matches, fitness classes, film screenings, screening sports events such as Wimbledon and live music events. Indicative noise levels have been provided for each event type.

To evaluate baseline noise levels since the opening of Co-op live arena and Canalside café bar. The survey included attended noise measurements at the nearest noise sensitive premises. The representative daytime background noise level for these receptors was measured to be L_{A90} 53 dB.

Based on the local authority criteria and measurement results, the cumulative noise level resulting from entertainment noise at 1 m from the worst affected windows of the nearest noise sensitive premises should not exceed L_{Aeq} 48 dB with specific octave band limits.

Initial calculations have been carried out which indicate that compliance with the criteria should be feasible for all but the noisiest events. A highly directional PA system is proposed to maximise the sound levels within City Square, whilst minimising noise egress to the residential receptors outside the MCFC development.

It is recommended that final limitations for the sound levels produced by the City Square PA system be established through commissioning / verification testing, to ensure compliance with the limits in Table 4.

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Appendix A

Survey details

Reference standards

- BS 7445 Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures*
- BS 7445: Part 2: 1991 *Description and measurement of environmental noise, Part 2. Guide to the acquisition of data pertinent to land use*.

Equipment

The attended noise measurements were taken using a Rion NL-52 sound level meter.

Calibration details for the equipment used during the survey are provided in Table A1.

Table A1 Equipment calibration data

Equipment description	Type/serial number	Manufacturer	Calibration expiry	Calibration certification number
Sound level meter	NL-52/00932326	Rion	24 Apr 26	TCRT23/1806
Microphone	UC-59/09251	Rion	24 Apr 26	TCRT23/1806
Pre-amp	NH-25/32354	Rion	24 Apr 26	TCRT23/1806
Calibrator	NC-74/34536129	Rion	24 Apr 26	TCRT23/1576

[1] Calibration of the meters used for the measurements is traceable to national standards. Calibration certificates for the sound level meters used in this survey are available upon request.

Calibration checks were carried out on the meters and their measurement chains at the beginning and end of the survey. No significant calibration deviation occurred.

Noise indices

Noise indices recorded included the following:

- $L_{Aeq,T}$ The A-weighted equivalent continuous sound pressure level over a period of time, T.
- $L_{AFmax,T}$ The A-weighted maximum sound pressure level that occurred during a given period, T, with a fast time weighting.
- $L_{A90,T}$ The A-weighted sound pressure level exceeded for 90% of the measurement period. Indicative of the background sound level.

Sound pressure level measurements are normally taken with an A-weighting (denoted by a subscript 'A', eg, L_{A90}) to approximate the frequency response of the human ear.

A more detailed explanation of these quantities can be found in BS 7445: Part 1: 2003 *Description and measurement of environmental noise, Part 1. Guide to quantities and procedures*.

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