

Our Ref: 13755.LE01.0

10 July 2024

Marc Moro
MPA (Construction Consultants) Limited
ScreenWorks
22 Highbury Grove
London
N5 2EF



W. www.rba-acoustics.co.uk

E. info@rba-acoustics.co.uk

London

44 Borough Road, London SE1 0AJ

T. +44 (0) 207 620 1950

Manchester

Bloc, 17 Marble Street, Manchester

M2 3AW

T. +44 (0)161 661 4504

Dear Marc,

CHOTTO MATTE, MANCHESTER

We are pleased to confirm the details and findings of our acoustic review of the proposed new Chotto Matte restaurant at the Level 10 Sky Bar of the recently completed St Michael's development (Phase 1) in the centre of Manchester.

1.0 INTRODUCTION & CONTEXT

St. Michael's is a new mixed-use redevelopment project along Jackson's Row in Manchester city centre, by Relentless Group. The overall development is split into two phases, comprising two towers containing a hotel, apartments, offices and a public square and rooftop restaurant/bar. Phase 1 of the scheme has recently been completed, which includes the rooftop restaurant/bar at Level 10, and is located towards the eastern end of the masterplan site.

Chotto Matte, a Japanese and Peruvian restaurant, is proposing to take tenancy of the new sky bar/restaurant space at Level 10 of the development. The restaurant is to include a bar area, dining areas, open kitchen, sushi bars, a reception area and a private dining room. The restaurant also includes outdoor dining and lounge space on the external terraces to the north, west and southern elevations. The restaurant provides for an immersive dining experience, with live entertainment and DJs amongst the offering.

The planning consent for the masterplan scheme included two conditions (Condition 32 and Condition 35) related to acoustics/noise from the A1, A3 A4 and A5 uses of the development. Planning Condition 32 relates to the impact of noise associated with the use of the external terrace areas of the building, while Condition 35 relates to the impact of noise breaking out of the internal areas of the restaurant and also transferring to the internal areas of the same building.

These conditions are relevant to the use of the proposed Chotto Matte restaurant at the Level 10 Sky Bar and need to be discharged, to the satisfaction of the Local Authority, prior to first use of the restaurant.

To this end, Hoare Lea was appointed to undertake the necessary acoustic studies to demonstrate compliance with the above planning conditions. Their assessments have been based on extensive environmental noise monitoring surveys at the site, the proposed internal and external building fabric constructions and considerations of expected activity noise associated with the various internal and external areas of the restaurant. The details of the Hoare Lea acoustic assessment, and associated mitigation recommendations, have been presented in their technical report reference REP-1013972-5A-AP-20220311, Revision 02 dated 2nd January 2024 (hereon in referred to as 'The Hoare Lea report').

The Hoare Lea report was submitted to the Local Authority, Manchester City Council, with a view to discharging Conditions 32 and 35 for this element of the Masterplan scheme. It is understood from conversations with the design team that the conclusions within the Hoare Lea report were largely accepted by the Local Authority, although some concern was raised in relation to the issue of high levels of amplified music noise from within the internal areas of the restaurant breaking out of the building during the later evening periods.

Specifically, the concerns of the Local Authority relate to the opening of the external doors by patrons accessing and leaving the terrace areas, which allows higher levels of noise breakout from the building to occur during the short periods that the doors are opened.

In relation to the above issue, RBA Acoustics has been approached by MPA (Construction Consultants) Limited, on behalf of the Client, Chotto Matte, to undertake a specific study in relation to the issue of noise breakout from the building during periodic opening of the terrace doors during the evening periods where the external terrace is in use and higher levels of amplified sound are prevalent inside the restaurant building.

This report presents the details and findings of the above assessment and is intended to be read as an addendum to the main Hoare Lea report dated 2nd January 2024.

2.0 ASSESSMENT DETAILS

The external terrace areas will be closed beyond 23:00 hours, where all customers will have vacated the terraces. At this time the external doors of the restaurant will be locked shut and, therefore, noise breakout from the premises will be controlled in line with that presented in the Hore Lea report.

The main period of concern with regards to noise breakout from the building is, therefore, between the hours of 18:00 and 23:00 hours, where internal amplified noise levels within the restaurant will be at their highest, and the external terrace will be in use. The Hoare Lea report presents the expected levels of amplified noise within the restaurant during these periods, and these are reproduced in Table 1 below for clarity:

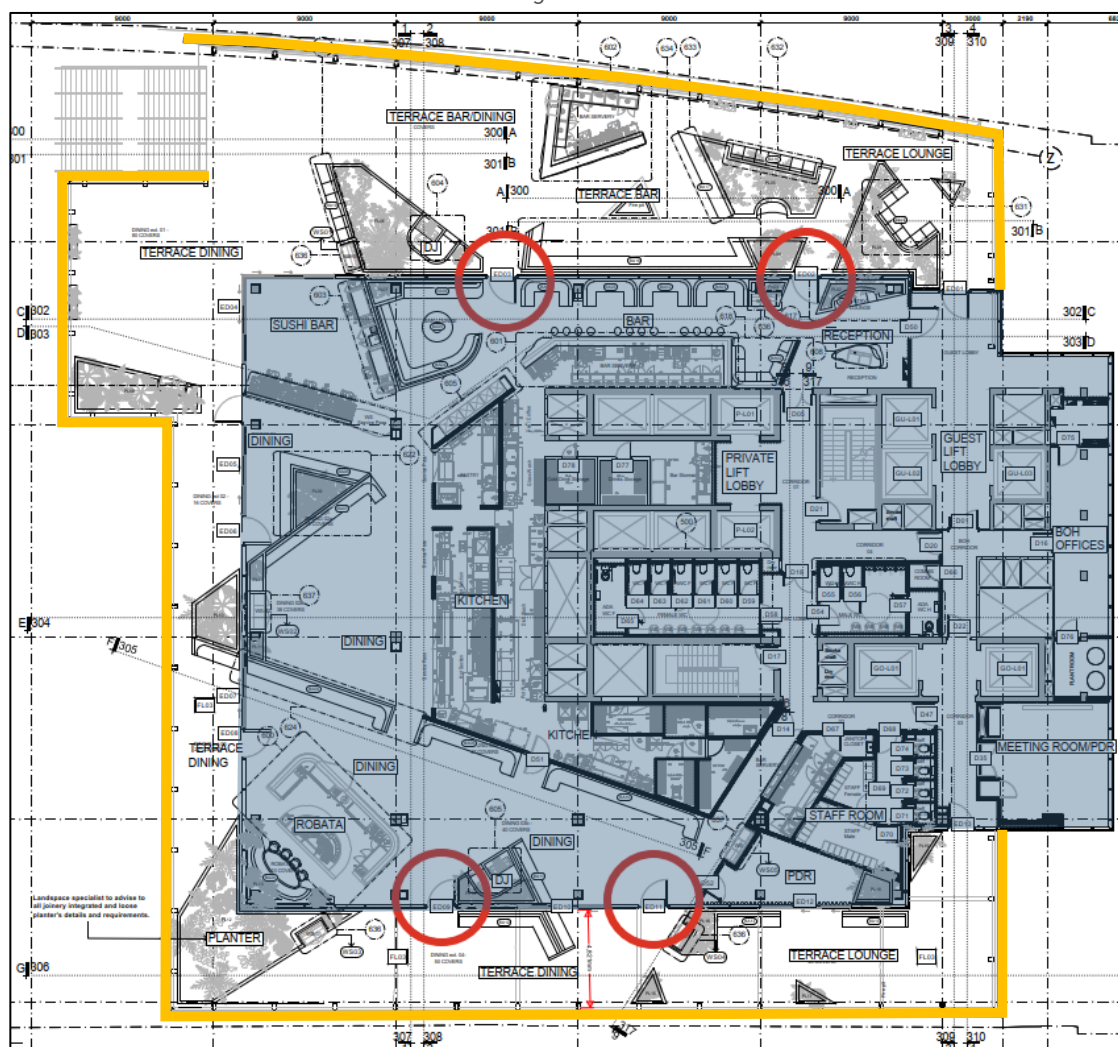
Table 1 – Restaurant Noise Levels

Outside of office working hours	Proposed Internal Noise Limits within Chotto Matte Restaurant ($L_{eq,T}$ dB re 20×10^{-6} Pa.) @ Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
18:00 to 03:30	90	95	90	90	90	90	90	90	97

The location of the doors to the external terrace areas are highlighted in Figure 1 below. There are four doors in total, two in the northern façade and two in the southern façade. The doors are circa 1.5 metres in width and 2.3 metres in height.

In addition to the external façade of the building, there is a glazed screen to the perimeter of the terrace. This screen is 3 metres in height above the finished floor level of the terrace. The extent of this glazed screen is highlighted in yellow in Figure 1 below.

Figure 1 – Location of External Doors to the Terraces



The external façade of the building at Level 10 around the restaurant is proposed to be fully glazed. The design specification for this glazing is a minimum sound insulation performance of $34\text{dB } R_w + C_{tr}$ with a corresponding minimum performance of 23dB in the 63 Hz Octave Band.

The doors within this façade are not considered likely to achieve this same specification as the seals and framing will be weaker than the main façade element. On the basis of the same glass specification, however, it is expected that a sound insulation performance of $32\text{dB } R_w + C_{tr}$ is likely to be provided when closed. When the doors are opened, however, the sound insulation performance of the doors is expected to be close to zero, although there is expected to be some residual sound insulation performance provided while the doors are partially opened.

On the basis of the above, the following sound insulation performance data has been assumed for our assessments.

Table 2 – Sound Insulation Performance of the Façade Elements

Façade Element	Sound Reduction Index (SRI, dB) @ Octave Band Centre Frequency (Hz)								R _w + C _{tr}
	63	125	250	500	1k	2k	4k	8k	
External Glazed Façade (non opening elements)	21	31	30	38	42.5	48	59.5	60	36dB
External Glazed Doors (When Closed)	21	21	25	32	35	33	36	40	32dB
External Glazed Doors (When Open)	5	5	5	5	5	5	5	5	5dB

Considering the above sound insulation performance of the individual external façade elements, and the relative areas of each element within the façade, we have calculated the composite acoustic performance of the overall façade system during the ‘doors closed’ and ‘door open’ scenarios. Table 3 below presents the assumed composite façade performances for the two scenarios.

Table 3 – Composite Sound Insulation Performance of the Façade

Scenairo	Sound Reduction Index (SRI, dB) @ Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
External Façade (Doors Closed)	21	35	30	38	41	45	50	52
External Façade (Single Door Open)	18	20	20	20	20	20	20	20

This data may be used to predict the expected sound levels at the key receptors close to the restaurant.

The key noise sensitive receptors close to the restaurant have been highlighted in Figure 2 of the Hoare Lea report. The key receptors are:

- The Old Nag’s Head Public House to the north west of the site
- The Radisson Hotel to the South of the site
- The Great Northern Tower to the south of the site
- 47 Peter Street to the south east of the site

These receptors have been considered in our assessments of noise impact due to the periodic opening of doors to the restaurant during the evening periods where amplified music will be high.

3.0 NOISE IMPACT ASSESSMENTS

Based on the details in the previous sections, RBA Acoustics has undertaken assessments to predict the impacts of noise associated with noise breakout from the restaurant upon the nearby identified noise sensitive receptors, based on a number of ‘door opening’ scenarios during a 15 minute period. It is assumed that a ‘door opening’ scenario would last over a typical 5 second period to allow for the door to be open, a person to walk through and the door to close again.

The results of our assessments are presented in Table 4 below for a typical 15 minute period. Note that the ‘door opening events’ are specific to the northern or southern façades of the terrace, rather than a combination of both façades.

Table 4 – Predicted Impacts on Noise Sensitive Receptors (15 minute Period)

Noise Sensitive Receptor	Prediced Noise Level at Noise Sensitive Receptor ($L_{Aeq, 15 \text{ minutes}}$)							
	Doors Closed	10 Door Openings	20 Door Openings	30 Door Openings	40 Door Openings	50 Door Openings	60 Door Openings	70 Door Openings
The Old Nag's Head	19dB	23dB	25dB	27dB	28dB	29dB	29dB	30dB
The Radisson Hotel	21dB	27dB	29dB	30dB	32dB	32dB	33dB	34dB
The Great Northern Tower	20dB	27dB	30dB	31dB	33dB	34dB	34dB	35dB
47 Peter Street	20dB	25dB	27dB	29dB	30dB	30dB	31dB	32dB

To put the above predictions into context, Table 1 of the Hoare Lea report presents the noise limits outside of the noise sensitive receptors in order that the requirements of the Local Authority planning Conditions 35 may be achieved. These noise limits are reproduced in Table 5 below for clarity:

Table 5 – Permissible Noise Limits

Receptor	Limit for Entertainment Noise at Worst Affected Façade of the Sensitive Receptors ($L_{Aeq, 15 \text{ minutes}}$ dB re 20×10^{-6} Pa.) @ Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
The Old Nag's Head	50	46	44	42	41	35	26	14	45
Other Receptors	48	48	45	42	40	35	28	22	45

In considering the above single figure dBA noise limits (i.e. 45dB $L_{Aeq, 15 \text{ minutes}}$) with the noise predictions in Table 4, it can be seen that, even with 70 door opening events (which represents the doors being open for almost 6 minutes) within any 15-minute period, the noise limit is not expected to be reached.

In addition to the single figure dBA noise levels, it is necessary to also demonstrate that the Octave Band noise limits will also not be exceeded. Table 6, therefore, presents the worst-case results of the assessment at the Old Nag's Head receptor based on 70 door opening events in any 15 minute period.

Table 6 – Predicted Impacts on Old Nag's Head Receptor

Detail	Noise Level at Old Nag's Head Receptor (70 Door Opening Events) ($L_{Aeq, 15 \text{ minutes}}$ dB re 20×10^{-6} Pa.) @ Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Predicted Noise Level - The Old Nag's Head	36.8	36.7	30.0	26.8	23.9	20.8	18.3	13.3	30
Noise Limit	50	46	44	42	41	35	26	14	45
Excess	-	-	-	-	-	-	-	-	-

Table 7 presents the worst-case results of the assessment at the other noise sensitive receptors based on 70 door opening events in any 15 minute period.

Table 7 – Predicted Impacts on Other Receptors

Detail	Noise Level at Other Receptors (70 Door Opening Events) ($L_{Aeq, 15 \text{ minutes}}$ dB re 20×10^{-6} Pa.) @ Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Predicted Noise Level - The Radisson Hotel	37.8	38.3	32.6	30.4	28.3	25.7	22.8	19.8	34
Predicted Noise Level - The Great Northern Tower	36.3	36.3	30.3	28.4	28.2	27.9	27.5	26.8	35
Predicted Noise Level - 47 Peter Street	39.7	38.6	31.0	27.2	24.1	23.3	23.3	20.3	32
Noise Limit	48	48	45	42	40	35	28	22	45
Excess	-	-	-	-	-	-	-	5	-

There is a small excess predicted at 8kHz Octave Band centre frequency, however, this is considered an anomaly of the assessment and not likely to occur in reality as it will be low frequency noise that would be most prevalent/dominant at the receptors. Similarly, it is not expected that a sound level of 90dB would be generated at 8kHz within the restaurant, which was the basis of the assessment.

It is recommended that a noise limiter be installed within the internal areas of the restaurant such that the following noise limits are not exceeded:

Table 8 – Recommended Noise Limits within the Restaurant

Outside of office working hours	Proposed Internal Noise Limits within Chotto Matte Restaurant ($L_{eq,T}$ dB re 20×10^{-6} Pa.) @ Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
18:00 to 03:30	90	95	90	90	90	90	90	85	97

We trust the above to be clear and of assistance. Should you wish to discuss the above in more detail, please do not hesitate to contact me.

Yours Sincerely
For RBA Acoustics

Martin Raisborough