Freetrade Exchange Manchester

Condition Discharge Report

29443/CDR1

24 September 2024

For:
Paul Butler Associates
31 Blackfriars Road
Salford
Manchester
M3 7AQ

Hann Tucker Associates
Consultants in Acoustics Noise & Vibration

Head Office: Duke House, 1-2 Duke Street, Woking, Surrey, GU21 5BA (t) +44 (0) 1483 770 595
Manchester Office: First Floor, 346 Deansgate, Manchester, M3 4LY (t) +44 (0) 161 832 7041
(w) hanntucker.co.uk (e) enquiries@hanntucker.co.uk

Hann Tucker Associates

Condition Discharge Report
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Document Control

Rev	Date	Comment	Prepared by	Reviewed by	Approved by
1	24/09/2024	-			
			Euan Ellis Assistant Consultant BA(Hons)	Jake Howarth Senior Associate BEng(Hons), MIOA	
0	23/09/24	-			
			George Grenfell Senior Consultant MSc, BSc(Hons), MIOA	Jake Howarth Senior Associate BEng(Hons), MIOA	

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Condition Discharge Report
Report 29443/CDR1

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Appendix A – Acoustic Terminology

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1.0 Introduction

Hann Tucker Associates Limited (Hann Tucker) has been commissioned by Paul Butler Associates to undertake acoustics works associated with the discharge of planning Condition 3b and 4b, which are as follows:

> *3b) Prior to the occupation of the development, a verification report will be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report, including cavity insulation recommendations. The report shall also undertake post-completion testing to confirm that acceptable criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed, along with any measures required to ensure compliance with the agreed noise criteria.*
>
> *Reason: To safeguard the amenities of nearby residential occupiers, as the site is located in a residential area, pursuant to policies SP1, DM1, and C10 of the Manchester Core Strategy, and to saved policy DC26 of the Unitary Development Plan for Manchester.*
>
> *4b) Prior to the operation of the scheme, a verification report shall be submitted to and approved in writing by the City Council as the local planning authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report. The report shall also undertake post-completion testing to confirm that the noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed, along with any measures required to ensure compliance with the agreed noise criteria.*
>
> *Reason: To safeguard the amenities of nearby residential occupiers, as the site is located in a residential area, pursuant to policies SP1, DM1, and C10 of the Manchester Core Strategy, and to saved policy DC26 of the Unitary Development Plan for Manchester.*

This Report aims to provide sufficient evidence to discharge the above conditions.

2.0 Objectives

2.1 Condition 3b

To conduct a site visit to measure internal operational noise levels within the tenant's space and at selected external locations during ‘normal’ operation, undertake sound insulation tests across the separating floor, and undertake synchronised internal/external measurements to establish the performance of the façade. Results of the testing will aim to confirm that the noise mitigation measures align with the approved acoustic report.

If noise limits are exceeded, additional attenuation measures will be recommended. The findings will be compiled in a technical report, including post-completion testing results and any required corrective measures.

2.2 Condition 4b

To measure noise levels at the source of the installed building services plant.

Access to all plant locations is necessary, with an M&E engineer present to isolate equipment and confirm operation at design duty. A desktop assessment will be carried out to assessment the plant installation, and any noise mitigation measures with the aim to comply with the approved acoustic report. The results, including post-completion testing and any necessary acoustic attenuation measures, will be detailed in a technical report for submission.

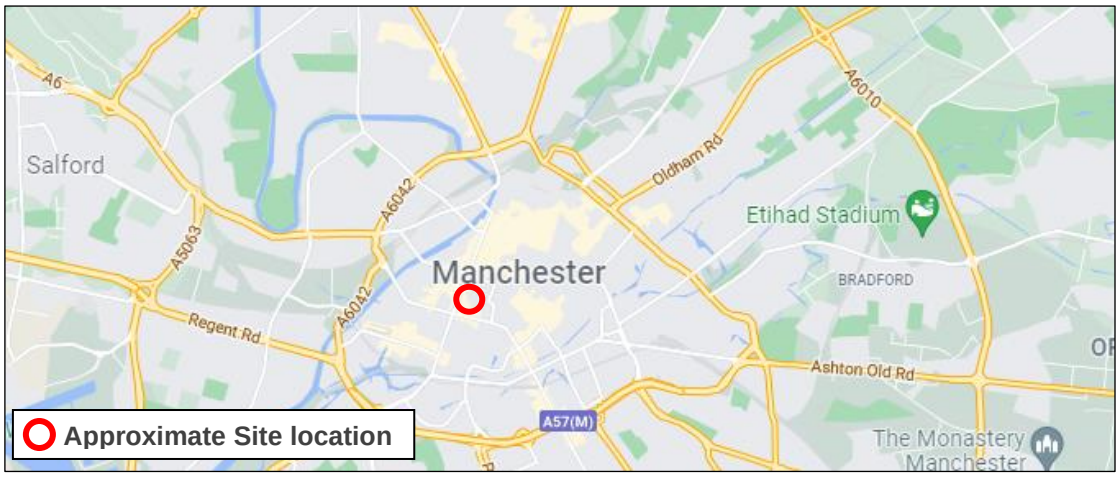
3.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

4.0 Site Description

4.1 Location

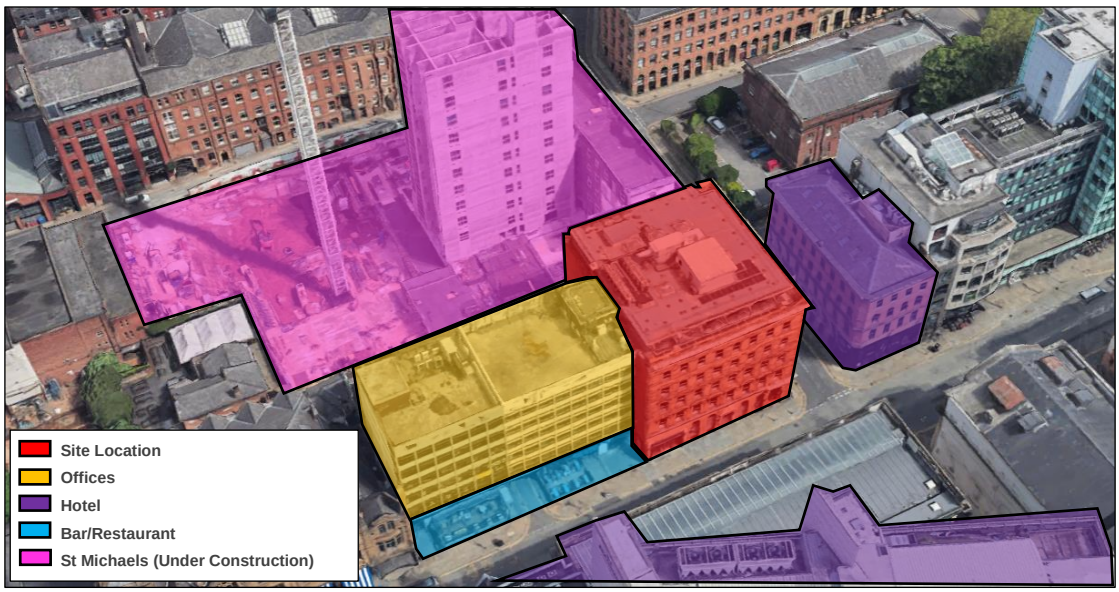
The proposed development is located on Peter Street in Manchester City Centre and falls under the jurisdiction of Manchester City Council. See site location below.



Location Map (Map Data ©2021 Google)

4.2 Description

The Freetrade Exchange is a 35,000 sqft, grade II listed building that has been refurbished. The lower-ground floor will be converted into a restaurant (Blacklock), while the upper floors will remain as office spaces. Located in a busy commercial area, the building is near ground-floor restaurants and bars. The adjacent building houses a Brewdog Bar and Rudy's Pizza on the ground floor, with offices above. The worst-case noise-sensitive receptors are considered to be The Forty Seven Hotel and St Michaels developments, as well as upper ground floor offices within the development itself. The St. Michaels development, to the north, is currently under construction and will comprise offices, commercial, residential and a hotel. The site is shown in the plan below.



Site Plan (Map Data ©2024 Google)

5.0 Acoustic Terminology

For an explanation of the acoustic terminology used in this report please refer to Appendix A enclosed.

6.0 Condition 3b Assessment

6.1 Criteria

6.1.1 Noise Transfer via. Floor

As presented in the submitted Noise Impact Assessment Report prepared by Hann Tucker, titled “29443-RP-PNA-R2-CDM- Plant Noise Assessment”, the aim should be to achieve an internal noise level 10 dB below the standard BS 8233:2014 internal ambient noise level criteria.

Based on the this, and with consideration to (a) the need for spectral noise control in octave bands between 63 Hz and 4 kHz, and (b) the fact that the offices will generally not be occupied when the bar is in full ‘high noise’ operation, we would propose that reverberant noise levels from the bar within the office spaces above should be controlled so as to not exceed NR 30 $L_{eq,T}$ (in octave bands).

6.1.2 Noise Breakout

MCC recommends that noise (L_{eq}) breaking out through the building facade of an entertainment venue should not exceed 10 dB below the background noise level (L_{90}) at all octave band frequencies at the nearest noise sensitive windows.

We therefore propose the following noise limits when measured at 1m from nearby noise sensitive windows. These limits are 10 dB below the typical lowest background noise levels at each octave band during the operational hours and are subject to the final approval of MCC.

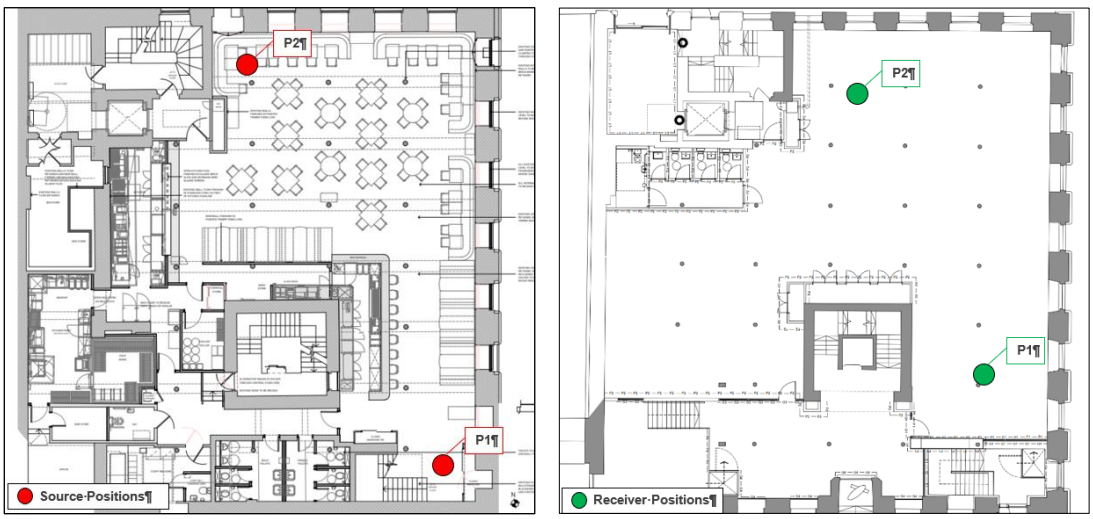
We understand that the venue is could to operate between 11:30 and 00:00 on Monday to Saturday and 11:30 on 22:00 on Sunday and Bank Holidays so both the day-time and night-time criteria need to be considered.

Description		External Entertainment Noise Level Limit (dB $L_{90,15min}$) at Octave Band Centre Frequency (Hz)						
		63	125	250	500	1000	2000	4000
Peter St / Southmill St	Daytime (07:00 – 23:00)	54	48	45	45	46	42	34
	Nighttime (23:00 – 07:00)	49	43	40	41	42	37	30
Bootle Street	Daytime (07:00 – 23:00)	56	48	42	39	38	35	28
	Nighttime (23:00 – 07:00)	58	48	41	38	36	31	25

6.2 Sound Insulation Testing (Across Floor)

6.2.1 Procedure

The sound insulation performance of the finished fitout (i.e. across floor slab) were established through baseline sound insulation tests carried out on site on Tuesday 17 September 2024. Sound insulation tests were carried out in general accordance with BS EN ISO 140-4:1998 'Acoustics – Measurement of sound insulation in buildings and of building elements – Part 4: Field measurement of airborne sound insulation between rooms'. The test locations are indicated below.



Markup highlighting sound source positions for the sound insulation testing up through the floor slab.

6.2.2 Equipment

The equipment used to undertake the sound insulation testing is detailed in the table below:

Description	Manufacturer	Type	Serial Number	Calibration
Type 1 Data Logging Sound Level Meter	Bruel & Kjaer	2250	3025254	Calibration on 21/02/2024
SLM Calibrator	Bruel & Kjaer	4231	2115545	Calibration on 28/11/2023
Sound Source	Behringer	Eurolive B112MP3	S180902739AJM	Stability Checked Monthly

6.2.3 Results

Hann Tucker Associates has tested the existing sound insulation performance between the lower ground floor restaurant/bar and the ground floor offices, the results are presented in in the table below.

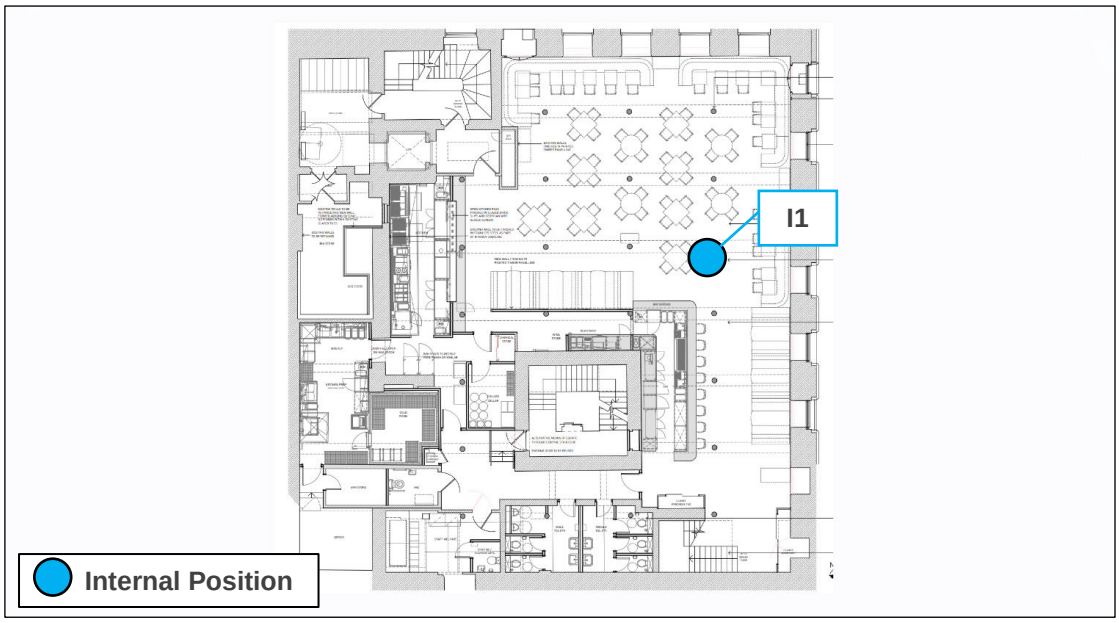
Measured Level Difference D_{nT} (dB) at Octave Band Centre Frequency (Hz)								
Measurement Location	63	125	250	500	1k	2k	4k	$D_{nT,w}$ (dB)
P1	27	35	46	52	58	58	62	55
P2	27	38	50	55	60	62	67	58

6.3 Sound Insulation Testing (Facade)

6.3.1 Procedure

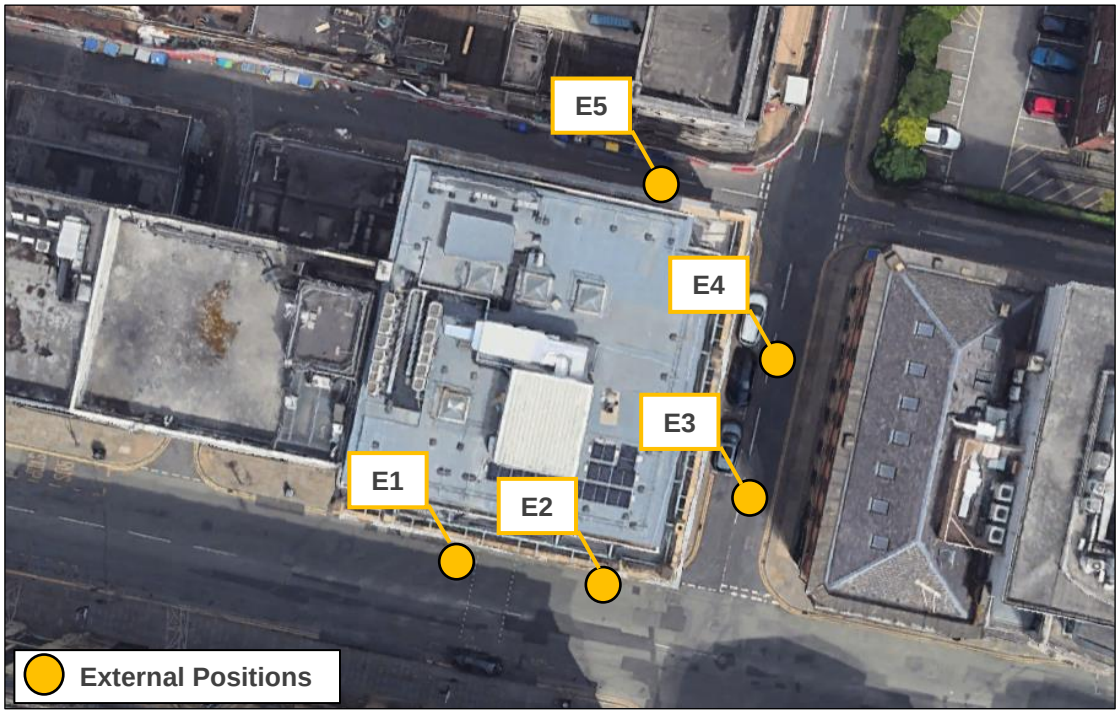
A series of synchronised internal/external noise level measurements were undertaken in order to establish the sound insulation performance of the finished façade using traffic noise from the adjacent roads as the noise source as undertaking a façade testing was not possible due to the high levels of pedestrian activity in the area.

The internal measurement location is indicated below:



Markup highlighting the internal noise measurement position.

External measurement locations are indicated below:



Markup highlighting the external noise measurement position.

6.3.2 Equipment

The equipment used to undertake the sound insulation testing is detailed in the table below:

Description	Manufacturer	Type	Serial Number	Calibration
Type 1 Data Logging Sound Level Meter	Bruel & Kjaer	2250	3025254	Calibration on 21/02/2024
SLM Calibrator	Bruel & Kjaer	4231	2115545	Calibration on 28/11/2023
Type 1 Data Logging Sound Level Meter	Larson Davis	LxT	5104	30/05/2024
SLM Calibrator	Larson Davis	Cal200	3083	27/03/2024

6.3.3 Results

Hann Tucker Associates has measured synchronised internal and external noise levels at the locations shown in Section 6.3.1, the results of which are provided below:

Measured Sound Pressure Level $L_{eq,1min}$ (dB) at Octave Band Centre Frequency (Hz)									
Measurement Location	**Measurement Time**	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**dBA**
P1	17/09/2024 08:48	48	44	47	51	48	44	41	32
	17/09/2024 08:51	48	46	51	48	48	48	41	32
	17/09/2024 08:53	47	43	43	44	43	40	37	28
	17/09/2024 08:54	50	46	46	47	46	41	38	29
	17/09/2024 08:57	48	47	46	47	45	44	43	33
E1	17/09/2024 08:48	77	73	70	68	67	63	58	49
E2	17/09/2024 08:51	70	66	64	64	62	58	53	44
E3	17/09/2024 08:53	68	64	62	63	60	55	48	37

Measured Sound Pressure Level $L_{eq,1min}$ (dB) at Octave Band Centre Frequency (Hz)									
Measurement Location	**Measurement Time**	**63**	**125**	**250**	**500**	**1k**	**2k**	**4k**	**dBA**
E4	17/09/2024 08:54	69	65	62	62	62	66	66	42
E5	17/09/2024 08:57	72	74	71	70	71	67	64	59

6.4 Assessment

6.4.1 Noise Transfer via. Floor

With consideration to the criteria set out in Section 6.1.1, and the measured level of sound reduction through the floor as shown in Section 6.2.3, we have assessed the noise transfer to the floor above from both ends of the restaurant i.e. from the entrance (P1) and from the rear (P2). The table below outlines the permissible noise output of the lower ground floor bar (ie tenant noise limits) from each location.

Calculated Internal Noise limits at P1							
Description	**Octave Band Centre Frequency (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Criteria in Office/Retail/Reception (NR 30)	57	46	38	32	28	25	23
P1 Room to Room Normalised Level difference (dB D_{nt})	27	35	46	52	58	58	62
Internal noise level limit in retail unit at P1 (dB L_{eq})	84	81	84	84	86	83	85
Calculated Internal Noise limits at P2							
Description	**Octave Band Centre Frequency (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Criteria in Office/Retail/Reception (NR 30)	57	46	38	32	28	25	23
P2 Room to Room Normalised Level difference (dB D_{nt})	27	38	50	55	60	62	67
Internal noise level limit in retail unit at P2 (dB L_{eq})	84	84	88	87	88	87	90

Further to the above, in-situ noise measurements were undertaken of the restaurant background music playing at a 'typical' operational level, as presented in a table below:

Description	Octave Band Centre Frequency (Hz)							Compliance (P1/P2)
	63	125	250	500	1k	2k	4k	
Measured Internal Noise level with Typical 'Background Music'	65	64	64	62	59	52	47	(✓/✓)

Based on the above, there is no indication that the background music itself is likely to cause any disturbance within the offices above. However, from observations onsite, the bar was still relatively calm and expected to be much quieter than it will be in full operation and full of patrons.

As such the tables below compares the P1 and P2 limits with different use cases:

Description	Octave Band Centre Frequency (Hz)							Compliance (P1/P2)
	63	125	250	500	1k	2k	4k	
P1 Tenant Noise Limit (dB L_{eq})	84	81	84	84	86	83	85	-
Restaurant Typical restaurant noise levels with low background music)	60	67	69	71	70	66	60	(✓/✓)
Drinking Establishment Typical busy bar with moderate background music	76	80	82	83	80	76	69	(✓/✓)
Drinking Establishment (Live Music) Drinking establishment with live band	99	93	93	91	90	90	90	(×/×)
Description	**Octave Band Centre Frequency (Hz)**							**Compliance**
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**	
P2 Tenant Noise Limit (dB L_{eq})	84	84	88	87	88	87	90	-
Restaurant Typical restaurant noise levels with low background music)	60	67	69	71	70	66	60	(✓/✓)
Drinking Establishment Typical busy bar with moderate background music	76	80	82	83	80	76	69	(✓/✓)
Drinking Establishment (Live Music) Drinking establishment with live band	99	93	93	91	90	90	90	(×/×)

The above indicates that if noise levels within the restaurant are comparable with a typical restaurant and/or drinking establishment, the operation of the unit is unlikely to cause an exceedance of the internal noise level criteria within the restaurant.

Notwithstanding the above, it is likely that the presence of live music would cause a disturbance to offices above with low frequency noise transfer. As such it is not advisable that live music is to be held within the restaurant while the offices are in operation.

6.4.2 Noise Breakout

With the results in Section 6.3.3, the sound reduction of each façade element has been calculated, as presented in the table below:

Facade	Calculated sound insulation performance of façade element $D_{2m,nT}$ (dB) at each Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Peter Street	28	30	27	21	22	23	21
Southmill Street	24	23	22	23	21	19	15
Bootle Street	26	29	29	27	31	26	24

It should be noted that the above façade performance appear to be lower than would be expected. This is likely due to the internal noise level being impacted by noises other than traffic noise, such as kitchen activity, for example. Therefore, while the above have been used to assess the development, the actual performance of the façade is likely slightly higher than the above particularly at mid to high frequencies.

Using the above, noise breakout from each façade to the respective worst-case receptor, has been calculated using the typical noise levels utilised in Section 6.4.1. The results are summarised in the table below:

Description	Noise Breakout Compliance Note		
	Restaurant	Drinking Establishment	Live Music Venue
Peter Street to The Edwardian Hotel	✓	✓	✗
Southmill Street to the 47 Hotel	✓	✓	✗
Bootle Street to St Michaels	✓	✓	✗

The summary above shows that the development should be suitable for use as a restaurant and bar/drinking establishment without exceeding the noise breakout criteria stipulated by the local authority and shown in Section 6.1.2. Detailed assessment results are provided in appendix B.

7.0 Condition 4b Assessment

7.1 Criteria

Based on the typical background noise levels determined in the previously issued plant noise assessment report (29443-PNA2-R5-JLS), the following plant noise emission limits are considered applicable for the consented development. These limits are presented as free-field limits.

Description	Cumulative Plant Rating Level, $L_{Ar,Tr}$ (dBA)
Daytime 07:00-23:00 hrs	48
Night-time 23:00-07:00 hrs	46

The above criteria are to be achieved with all of the proposed plant operating simultaneously.

7.2 Plant Noise Commissioning

7.2.1 Overview

As part of the Blacklock fitout on the lower ground floor unit, several new plant items have been introduced, and so Hann Tucker attended site on 12 September 2024 to undertake commissioning of plant noise emissions associated with the restaurant.

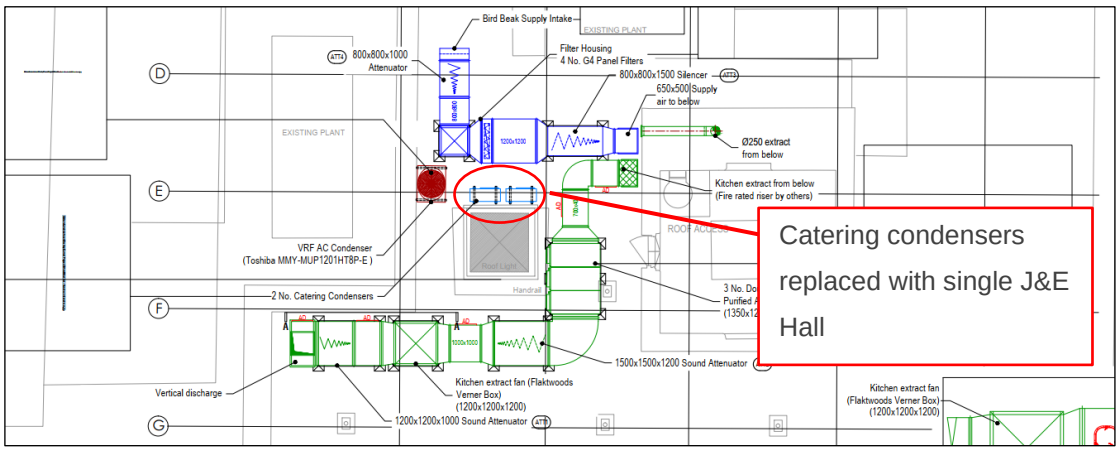
We understand that the installed plant is as follows

Plant Description	Location	Qty	Plant Make	Model
VRF AC Condenser	Roof	1	Toshiba	MMY-MUP1201HT8P-E
AHU	Roof	1	Systemair	MUB 062 630D4 Multibox
Kitchen Extract Fan	Roof	1	Systemair	MUB/T100 630D4 -K2-L
Toilet Extract Fan	Roof	1	TBC	TBC
Catering Condenser	Roof	1	J&E Hall	Fusion Scroll

It is worth noting that the previous assessment (29443-PNA2-R5-JLS) was based on the presence of 2no. Intarcon catering condensers, however, these have been replaced by a single J&E Hall condenser. Furthermore, the toilet extract fan was not included within the previous assessment, however, this has been picked up as part of the commissioning measurements.

7.2.2 Plant Location

The drawing below highlights the layout of the plant installation.



2023 Proposed HVAC Plan 001-1056-02 Rev J c/o Chapman Ventilation.

The nearest noise-sensitive receptor include:

- The consented office development, St Michaels, situated approximately 30 meters to the north (highlighted in yellow below) of the general plant area.
- The consented residential development, St Michaels, situated approximately 50 meters to the north (highlighted in purple below) of the general plant area.

These details are illustrated in the accompanying plan:

Nearest Noise Sensitive Receptors for Roof Level Plant

7.2.3 Plant Operation

The following operation schedule has been confirmed by Blacklock:

- VRF AC Condenser: 07:00hrs – 00:00hrs
- AHU (Supply): 07:00hrs – 00:00hrs
- Kitchen Extract Fan: 07:00hrs – 00:00hrs
- Toilet Extract Fan: 07:00hrs – 00:00hrs
- Catering Condenser: 24/7

7.2.4 Measured Plant Noise Data

Measured noise data for each of the proposed plant items is provided below. These noise levels have also been corrected for the residual noise level measured within the rooftop plant area:

Plant Description	Sound Pressure Level (dB re $2x10^{-5}$ Pa) at 1 metre at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
VRF AC Condenser - MMY-MUP1201HT8P-E	68	66	66	64	58	55	47	39	64
Kitchen Extract Fan (Side) - MUB/T100 630D4 -K2-L	71	74	63	63	60	56	63	62	69

Plant Description	Sound Pressure Level (dB re 2x10^{-5} Pa) at 1 metre at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
Kitchen Extract Fan Discharge - MUB/T100 630D4 -K2-L	74	64	63	66	66	65	61	59	71
Toilet Extract Fan	75	69	65	67	66	65	61	59	71
Catering Condenser - J&E Hall Fusion Scroll	71	71	64	62	61	56	49	40	65
AHU (Supply) MUB 062 630D4 Multibox	71	73	71	68	67	63	56	49	71

7.3 Plant Noise Impact Assessment

The following tables summarises our predictions of atmospheric noise emissions from the proposed plant to the nearest noise sensitive residential windows during daytime and nighttime periods, which are both considered to be the St Michaels development offices and residential respectively.

Description	Daytime Plant Noise Emission Assessment to St Michaels Development (Offices)					
	VRF AC Condenser	Kitchen Extract Fan (Side)	Kitchen Extract Fan Discharge	Toilet Extract Fan	Catering Condenser	AHU (Supply)
Measured Sound Pressure Level @ 1m	64	69	61	71	65	71
Distance Correction	-28	-33	-28	-34	-26	-28
Barrier Correction	-5	0	0	0	-10	0
BS4142 Penalties	+3 (Intermittent)				+3 (Intermittent)	
Calculated Noise Level at Receptor $L_{Ar,Tr}$	35	36	30	37	32	39
Cumulative Noise Level at receptor	46					

Description	Daytime Plant Noise Emission Assessment to St Michaels Development (Offices)					
	VRF AC Condenser	Kitchen Extract Fan (Side)	Kitchen Extract Fan Discharge	Toilet Extract Fan	Catering Condenser	AHU (Supply)
Criteria Day dBA	48					
Compliance Daytime	✓					

Description	Night-Time Plant Noise Emission Assessment to St Michaels Development (Residential)					
	VRF AC Condenser	Kitchen Extract Fan (Side)	Kitchen Extract Fan Discharge	Toilet Extract Fan	Catering Condenser	AHU (Supply)
Measured Sound Pressure Level @ 1m dBA	64	69	61	71	65	71
Distance Correction dBA	-28	-33	-28	-34	-26	-28
Barrier Correction dBA	-5	0	0	0	-10	0
BS4142 Penalties	+3 (Intermittent)	0	0	0	+3 (Intermittent)	0
Calculated Noise Level at Receptor $L_{Ar,Tr}$ dBA	35	36	30	37	32	39
Cumulative Noise Level at receptor $L_{Ar,Tr}$ dBA	44					
Criteria Night $L_{Ar,Tr}$ dBA	46					
Compliance Nighttime	✓					

Our calculations indicate that the installed plant should be capable of achieving the requirements of the Local Authority outlined in Section 7.1.

8.0 Conclusions

The noise transfer assessment, including both floor noise transfer and noise breakout through the façades, provides evaluation of the venue's impact on the offices above and surrounding receptors. Measured sound reduction through the floor and calculated internal noise limits confirm that typical restaurant and bar operations with background music should not exceed the noise criteria for the offices above. Additionally, the noise breakout assessment shows compliance with local authority requirements for nearby receptors along Peter Street, Southmill Street, and Bootle Street. However, the presence of live music is unlikely to be feasible due to the potential for low-frequency noise transfer exceeding acceptable levels.

These findings demonstrate that the venue's noise transmission to adjacent units and nearby receptors is effectively controlled, providing sufficient evidence for the discharge of Condition 3b, providing live music is not to be allowed for within the development.

In terms of plant noise, the commissioning results show that noise emissions from the installed equipment are within the required limits for both daytime and nighttime operation. The cumulative noise levels measured at the nearest sensitive receptors, including the St Michaels development, confirm that the plant operates within permissible limits. This provides sufficient justification for the discharge of Condition 4b.

In conclusion, the assessments of noise transfer and noise breakout support the discharge of Condition 3b, while the plant noise commissioning supports the discharge of Condition 4b.

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Appendix A

The acoustic terms used in this report are defined as follows:

dB — Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA — The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The $_A$ subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

$L_{90,T}$ — L_{90} is the noise level exceeded for 90% of the period *T* (i.e. the quietest 10% of the measurement) and is often used to describe the background noise level.

$L_{eq,T}$ — $L_{eq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time period, *T*.

L_{max} — L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.

Sound Pressure Level (L_p) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).

Sound Power Level (SWL or L_w) is the total amount of sound energy inherent in a particular sound source, independent of its environment. It is a logarithmic measure of the sound power in comparison to a specified reference level (usually 10^{-12} W).

Appendix B

Detailed Noise Breakout Assessment

Noise Breakout from Peter Street Facade							
Description	**Sound Pressure level at Octave Band Frequencies (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Restaurant Typical restaurant noise levels with low background music)	60	67	69	71	70	66	60
Peter Street Façade Performance	28	30	27	21	22	23	21
Calculated Noise Level at Nearest Receptor	6	11	16	24	22	17	13
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✓						
Criteria Nighttime	49	43	40	41	42	37	30
Compliance	✓						
Drinking Establishment Typical busy bar with moderate background music	76	80	82	83	80	76	69
Peter Street Façade Performance	28	30	27	21	22	23	21
Calculated Noise Level at Nearest Receptor	22	24	29	36	32	27	22
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✓						
Criteria Nighttime	49	43	40	41	42	37	30
Compliance	✓						
Drinking Establishment (Live Music) Drinking establishment with live band	99	93	93	91	90	90	90

Noise Breakout from Peter Street Facade							
Description	**Sound Pressure level at Octave Band Frequencies (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Peter Street Façade Performance	28	30	27	21	22	23	21
Calculated Noise Level at Nearest Receptor	45	37	40	44	42	41	43
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✗						
Criteria Nighttime	49	43	40	41	42	37	30
Compliance	✗						

Noise Breakout from Southmill Street Facade							
Description	**Sound Pressure level at Octave Band Frequencies (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Restaurant Typical restaurant noise levels with low background music)	60	67	69	71	70	66	60
Southmill Street Façade Performance	24	23	22	23	21	19	15
Calculated Noise Level at Nearest Receptor	16	24	27	27	28	27	25
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✓						
Criteria Nighttime	49	43	40	41	42	37	30
Compliance	✓						
Drinking Establishment Typical busy bar with moderate background music	76	80	82	83	80	76	69

Noise Breakout from Southmill Street Facade							
Description	**Sound Pressure level at Octave Band Frequencies (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Southmill Street Façade Performance	24	23	22	23	21	19	15
Calculated Noise Level at Nearest Receptor	32	37	40	39	38	37	34
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✓						
Criteria Nighttime	49	43	40	41	42	37	30
Compliance	✗						
Drinking Establishment (Live Music) Drinking establishment with live band	99	93	93	91	90	90	90
Southmill Street Façade Performance	24	23	22	23	21	19	15
Calculated Noise Level at Nearest Receptor	55	50	51	47	48	51	55
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✗						
Criteria Nighttime	49	43	40	41	42	37	30
Compliance	✗						

Noise Breakout from Bootle Street Facade							
Description	**Sound Pressure level at Octave Band Frequencies (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Restaurant Typical restaurant noise levels with low background music)	60	67	69	71	70	66	60

Noise Breakout from Bootle Street Facade							
Description	**Sound Pressure level at Octave Band Frequencies (Hz)**						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
Bootle Street Façade Performance	24	23	22	23	21	19	15
Calculated Noise Level at Nearest Receptor	13	17	20	24	19	19	16
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✓						
Criteria Nighttime	58	48	41	38	36	31	25
Compliance	✓						
Drinking Establishment Typical busy bar with moderate background music	76	80	82	83	80	76	69
Bootle Street Façade Performance	24	23	22	23	21	19	15
Calculated Noise Level at Nearest Receptor	29	30	33	36	29	29	25
Criteria Daytime	54	48	45	45	46	42	34
Compliance	✓						
Criteria Nighttime	58	48	41	38	36	31	25
Compliance	✓						
Drinking Establishment (Live Music) Drinking establishment with live band	99	93	93	91	90	90	90
Bootle Street Façade Performance	24	23	22	23	21	19	15
Calculated Noise Level at Nearest Receptor	52	43	44	44	39	43	46
Criteria Daytime	54	48	45	45	46	42	34

Noise Breakout from Bootle Street Facade							
Description	Sound Pressure level at Octave Band Frequencies (Hz)						
	63	125	250	500	1k	2k	4k
Compliance	✘						
Criteria Nighttime	58	48	41	38	36	31	25
Compliance	✘						