



King's House Manchester

Planning Condition 6a

dBx Acoustics Ltd
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Jersey Street
Manchester
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24081-R01-JT-King's House

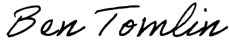
Client: Bruntwood

Date: 17/10/2024

TABLE OF CONTENTS

TABLE OF CONTENTS	2
REVISION HISTORY	2
1 INTRODUCTION	3
2 ASSESSMENT CRITERIA	4
LOCAL AUTHORITY REQUIREMENTS	4
BS 4142:2014 'METHODS FOR RATING AND ASSESSING INDUSTRIAL AND COMMERCIAL SOUND'	4
3 SITE DESCRIPTION	5
SITE DESCRIPTION.....	5
4 ENVIRONMENTAL NOISE SURVEY	6
EQUIPMENT USED	7
WEATHER CONDITIONS	7
5 ENVIRONMENTAL NOISE SURVEY RESULTS	8
6 BUILDING SERVICE NOISE EMISSIONS - CONDITION 6A	10
PLANT NOISE EMISSION LIMITS	10
PROPOSED PLANT.....	10
BS4142 ASSESSMENT.....	12
7 SUMMARY AND CONCLUSION	13
APPENDIX A – GLOSSARY OF ACOUSTIC TERMINOLOGY	14
APPENDIX B –MEASURED UNATTENDED NOISE LEVELS	15
APPENDIX D –ATTENUATOR INSERTION LOSS	16

REVISION HISTORY

Revision	Date	Revision Details	Author	Checked
R01	17/10/2024	Original Issue	 <small>Joseph Tony (Oct 17, 2024 11:08 GMT+1)</small> Joseph Tony BTech MIOA	 Ben Tomlin BSc MIOA

1 INTRODUCTION

- 1.1 dBx Acoustics Ltd has been appointed by Bruntwood to provide a plant noise impact assessment to discharge Condition 6a of planning application reference 133409/FO/2022 relating to the proposed plant at King's House at King St. West, Manchester, M3 2WY.
- 1.2 This report presents a BS4142 assessment of the proposed plant at the nearest noise sensitive receptor to discharge the planning condition.
- 1.3 A glossary of acoustic terminology is presented in Appendix A.

2 ASSESSMENT CRITERIA

Local Authority Requirements

2.1 The site falls under the jurisdiction of Manchester City Council (MCC).

2.2 Condition 6a of planning permission reference 22/01208/FUL states:

“6) a) Prior to the installation of the externally mounted ancillary equipment and ground level plant located behind the louvres, the equipment shall be acoustically insulated in accordance with a scheme submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the equipment.

Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location.”

2.3 On this basis, the noise emissions from the plant should be controlled to no higher than 5dB lower than the typical background noise level at the NSRs.

BS 4142:2014 ‘Methods for Rating and Assessing Industrial and Commercial Sound’

2.4 BS 4142:2014 sets out a procedure for assessing noise impact whereby a Noise Rating is determined and compared with the existing local Background Sound Level.

2.5 The Rating Level (dB $L_{Ar,Tr}$) is evaluated from the Specific Noise Level by including several, cumulative corrections to account for factors such as distinguishable tone, impulse, intermittency or other readily distinguishable sound characteristics.

2.6 The assessment of the impact depends upon the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level. An initial estimate of the impact of the specific sound is made by subtracting the Background Sound Level from the Rating Level, while considering the following points:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.

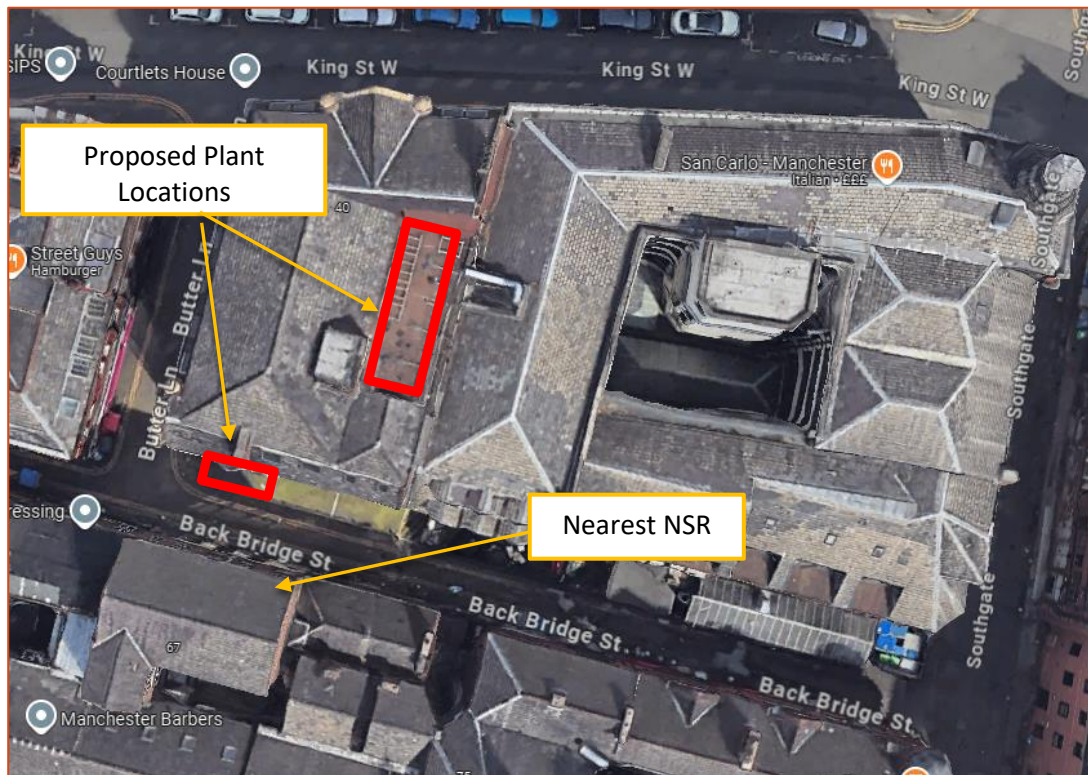
d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

3 SITE DESCRIPTION

Site Description

- 3.1 The application site is King's House, located on King Street West, Manchester, M3 2WY.
- 3.2 Figure 1 below shows the location of the site and the nearby noise sensitive receptors (NSRs).
- 3.3 The nearest NSRs are apartments and offices on Back Bridge Street, approximately 6m to the south of the proposed ground floor external plant area and 15m to the south of the proposed roof plant area.

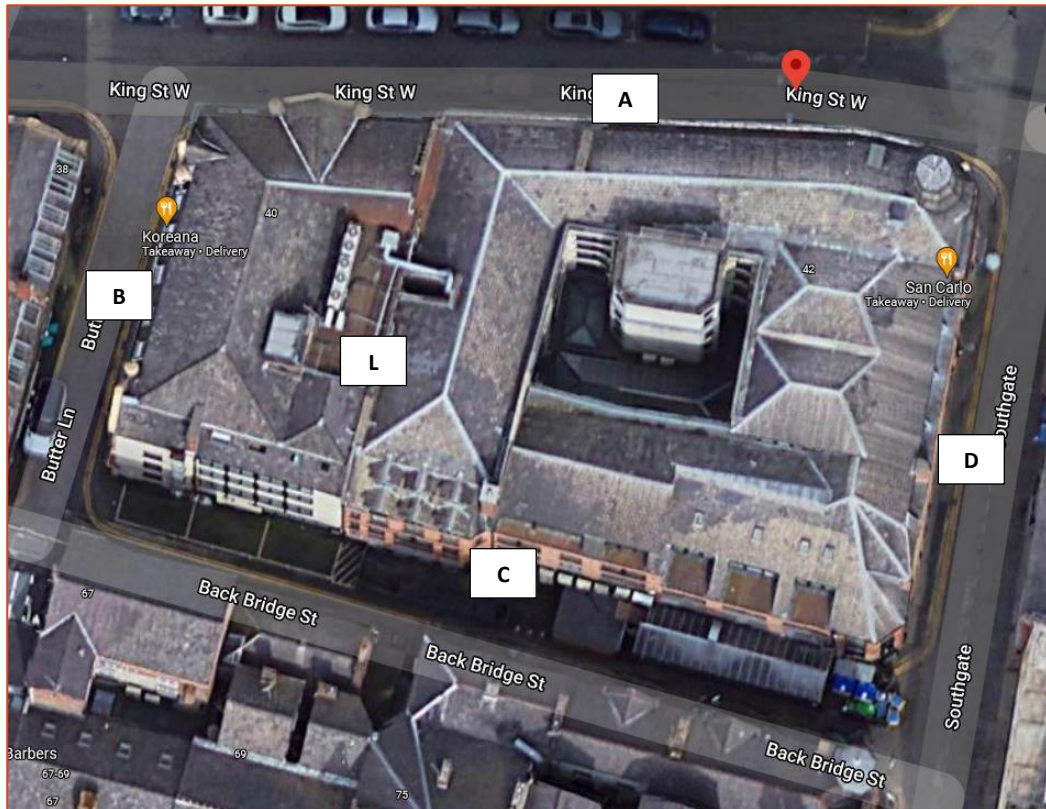
Figure 1: Site and Nearby NSRs



4 ENVIRONMENTAL NOISE SURVEY

- 4.1 In order to assess the external noise levels, a noise survey was undertaken on Wednesday 3rd November 2021.
- 4.2 Noise levels were measured at four locations around the building, as indicated in Figure 2, below.
- 4.3 In addition, unattended noise levels were measured with a noise logger at Location L, shown in Figure 2, between Friday 12th and Monday 15th November 2021.

Figure 2: Measurement Locations



- 4.4 All measurements were undertaken in accordance with BS 7445-1:2003 *Description and Measurement of Environmental Noise*.

Equipment Used

- 4.5 The equipment used in the environmental noise survey is detailed in Table 1 below.

Table 1: Equipment Used

Measurement Type	Equipment	Manufacturer / Model	Serial Number
Attended measurements	Sound Level Meter	Cirrus CR:171C	G300741
	Microphone	Cirrus MK:224	211733D
	Calibrator	Cirrus CR:515	87921
Unattended measurements	Sound Level Meter	Casella C633C	1716934
	Microphone	CEL 251	000847
	Calibrator	CEL 120/1	2045151

- 4.6 The sound level meters were calibrated before and after the measurements with no significant drift recorded. An accredited laboratory calibrated the equipment not more than two years prior to the measurements being made, except for the calibrators, which had been calibrated not more than one year prior to the survey.

Weather Conditions

- 4.7 Weather conditions throughout the survey were cool with little/no wind and scattered clouds.
- 4.8 All microphones were protected with a windshield for the duration of the survey.

5 ENVIRONMENTAL NOISE SURVEY RESULTS

- 5.1 A summary of the noise levels measured during the attended noise survey on Wednesday 3rd November 2021 are shown in Table 2, below.
- 5.2 Noise levels were measured at four locations around the building, as indicated in Figure 2, above.

Table 2: Summary of Attended Noise Measurements

Location	Period	Ambient Noise Level, dBL _{Aeq,15min}	Background Noise Level, dBL _{A90,15min}
A – King Street West	1400-1410h	60	51
	1500-1510h	55	50
	1600-1615h	61	51
B – Butter Lane	1415-1425h	57	52
	1515-1525h	55	51
C – Back Bridge Street	1430-1440h	56	55
	1530-1540h	58	57
D - Southgate	1445-1455h	58	51
	1545-1555h	56	51

- 5.3 Noise levels at locations A and D were dominated by road traffic, on King St West and local traffic, while noise levels at Locations B and C were dominated by plant serving the buildings on Butter Lane and Back Bridge St.
- 5.4 Unattended measurements were taken at Location L over a weekend period of 12th-14th November 2021, on the roof of Kings House.
- 5.5 A summary of the measured unattended noise levels is displayed in Table 3, below. The full measurements are presented graphically in Appendix B.
- 5.6 The daytime period is 07:00h-23:00h, with night-time assessed from 23:00h-07:00h.

Table 3: Summary of unattended Noise Measurements

Date	Period	Ambient Noise Level, dBL _{Aeq,T}	Typical Background Noise Level, dBL _{A90,T}
12/11/2021	Day ¹	55	52
	Night	52	46
13/11/2021	Day	53	52
	Night	52	45
14/11/2021	Day	51	49
	Night	48	45

- 5.7 In terms of the background noise levels, the statistical analysis methodology described in BS 4142:2014 '*Methods for Rating and Assessing Industrial and Commercial Sound*' (BS4142), has been used to determine the typical background noise levels in each daytime and night-time period.
- 5.8 Comparing the background noise levels presented in Tables 2 and 3, the daytime background noise levels measured at Locations A, B and D during the attended noise survey are broadly similar to the background noise levels measured during the unattended noise survey.
- 5.9 The measured background noise levels at Location C (Back Bridge Street) are approximately 3-5dB louder than the measured unattended typical background noise levels.
- 5.10 On this basis, background noise levels at the nearest affected noise sensitive receptors (flats and offices on Back Bridge Street) would be around 3-5dB higher than those detailed in Table 3.

¹ Only part of measurement period measured, from 1445h – 2300h

6 BUILDING SERVICE NOISE EMISSIONS - CONDITION 6A

Plant Noise Emission Limits

- 6.1 Condition 6a requires that the noise emissions from the external plant should be controlled to no higher than 5dB lower than the existing background noise level at the NSRs.
- 6.2 The building services plant items are understood to operate during the daytime (07:00h-23:00h) only.
- 6.3 The nearest noise sensitive locations are the flats and offices on Back Bridge Street, at Location C in Figure 2, above.
- 6.4 Based on the background noise levels detailed in Table 2, typical daytime background noise levels at this location are around 55dBL_{A90,T}, which is typical for a city centre location. This therefore relates to a rated plant noise limit of 50dBL_{Ar,Tr}.

Proposed Plant

- 6.5 The proposed plant items and associated noise data are summarised in Table 3, below.

Table 3: Proposed Building Services Plant items

Plant Item	Quantity	Make/Model Number	Location	Component	Sound Pressure Level @1m dBL _{Aeq,T}
ODU-4-12-1	1	Mitsubishi PUZ-ZM50VKA2	Roof Plant Area	-	46
ODU-1-4-1 ODU-2-6-1 ODU-3-8-1 ODU-4-10-1	4	Mitsubishi PURY-P300YNWA1			67
ODU-4-11-1	1	Mitsubishi PURY-P400YNWA			69
ODU-1-5-1 ODU-2-7-1 ODU-3-9-1	3	Mitsubishi PURY-P600YSNWA			70
Toilet Extract Fan	1	STD200-1EC			
				Outlet	73
				Breakout	53
MVHR	7	Mitsubishi Lossnay LGH100RVXE	Grilles terminating at Roof Level	Discharge	43
				Fresh Air	43
MVHR	2	Mitsubishi Lossnay LGH50RVXE		Discharge	62
				Fresh Air	62

Plant Item	Quantity	Make/Model Number	Location	Component	Sound Pressure Level @1m dBL _{Aeq,T}
MVHR	6	Mitsubishi Lossnay LGH100RVXE	Grilles terminating at Central Courtyard Area	Discharge	44
				Fresh Air	44
ODU-0-3-1	1	Mitsubishi PUZ-ZM50VKA2	Ground Floor Plant Area	-	46
ODU-0-2-1	1	Mitsubishi PUMP-P140YKM			53
ODU-0-1-1	1	Mitsubishi PURY- P200YNWA2			59
MVHR	1	Mitsubishi Lossnay LGH200RVXE	Grilles terminating at Ground Floor Level	Discharge	51
				Fresh Air	51
AHU	1	n/a		Discharge	45
				Fresh Air	48

- 6.6 The noise levels for MVHRs, AHU and toilet extract fan at the duct terminals are inclusive of various duct losses and the relevant attenuator insertion losses, as shown in the attenuator schedule reproduced in Appendix C.

BS4142 Assessment

- 6.7 The NSRs to the south, on Back Bridge Street, are the most affected location in terms of noise exposure from building service plant items.
- 6.8 These NSRs are approximately 6m to the south of the proposed ground floor external plant area, and 15m to the south of the proposed roof plant area.
- 6.9 Based on our experience of similar plant, and the manufacturer's data provided, noise emissions from the plant items are not tonal, therefore no correction for tonality has been applied. Corrections have been made for distance and screening, as appropriate.
- 6.10 On the basis of the above, the predicted, cumulative specific noise level at the NSR is $49\text{dBL}_{\text{Aeq, T}}$.
- 6.11 A BS4142 assessment of noise affecting the NSR is provided in Table 4, below.

Table 4: BS 4142 Assessment - Daytime (07:00h-23:00h) – Back Bridge St

Item	Calculation	Relevant Clause	Comments
Measured background sound level - daytime	$55\text{dBL}_{\text{A90, 1hr}}$	8.3	The typical background sound level measured during the daytime period.
Specific sound level- daytime	$49\text{dBL}_{\text{Aeq, T}}$	7.3.3	A prediction made using the methodology outlined above, includes all sources, screening and distance corrections.
Assessment made during the daytime period so reference period is 1 hour.		7.2	-
Acoustic Feature Correction	0dB	9.2	No acoustically distinct characteristics
Rating Level- daytime	$49\text{dBL}_{\text{Ar, Tr}}$	9.2	The predicted Rating Level during the daytime period.
Excess of Rating Level over background sound level - daytime	- 6dB	11	-
Assessment indicates low likelihood of adverse impact		11	Predicted Rating Level does not exceed the measured typical background level. This is an indication of the development having a low impact.
Uncertainty of the assessment	Minor	10	Background sound level based on repeatable measurements. The predicted Rating Level is based on established prediction methodologies.

- 6.12 It can be seen from Table 4, above, that the predicted cumulative plant noise level at the NSRs is 6dB lower than the existing background noise level, and hence would have a low impact.
- 6.13 This therefore demonstrates compliance with Planning Condition 6a.

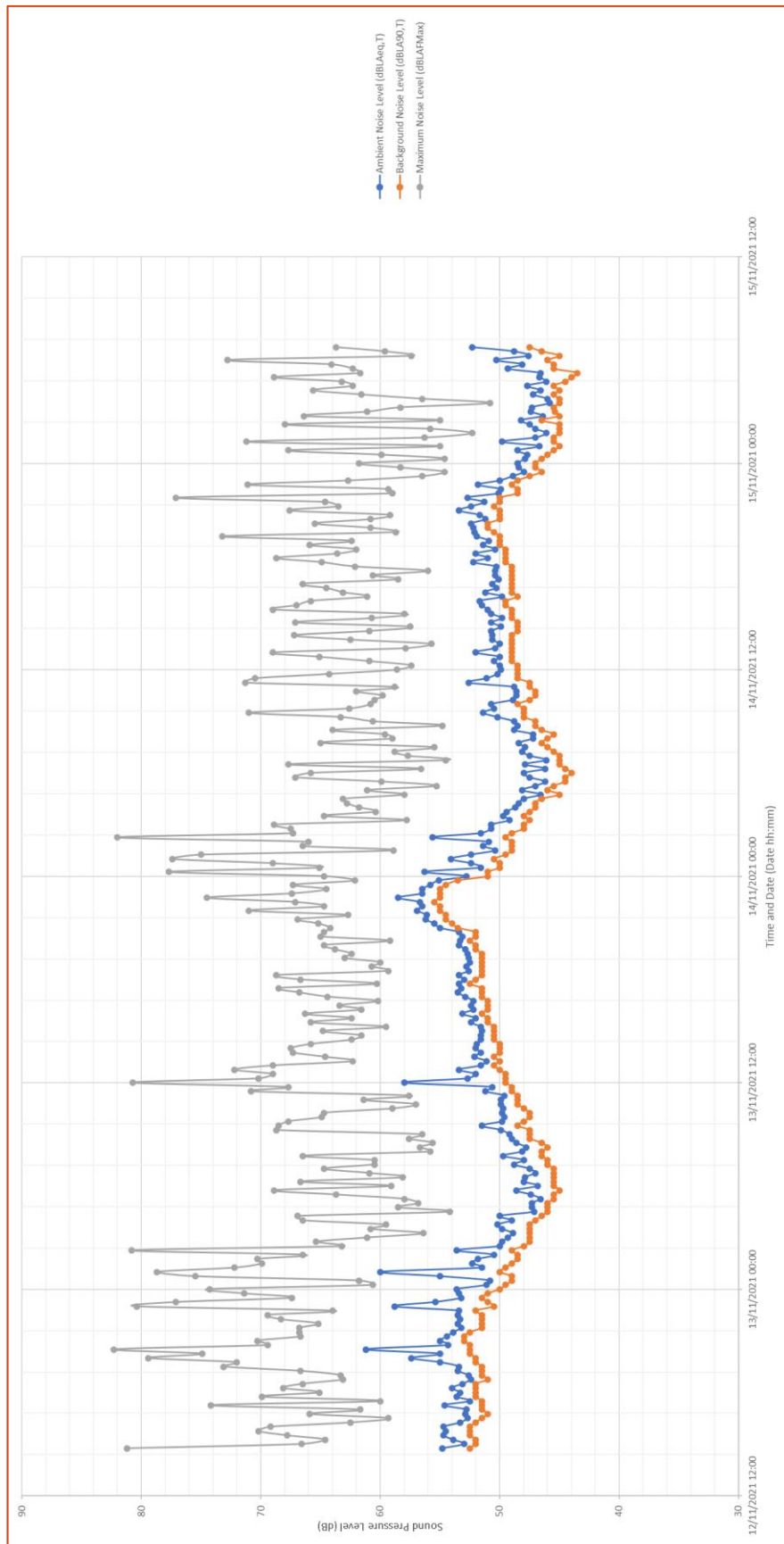
7 SUMMARY AND CONCLUSION

- 7.1 This report provides an acoustic assessment of plant noise emissions from King's House at King St. West, Manchester, M3 2WY, in order to discharge Condition 6a of planning permission 133409/FO/2022.
- 7.2 Based upon manufacturer's noise data, and background noise levels measured by dBx Acoustics, a BS4142 assessment of operational plant noise levels has been undertaken at the nearest sensitive properties.
- 7.3 The results of the assessment show that the cumulative plant noise emissions level is 6dB lower than the existing background noise level, and the requirements of Condition 6a of planning permission 133409/FO/2022 can therefore be discharged.

APPENDIX A – GLOSSARY OF ACOUSTIC TERMINOLOGY

Decibel, dB	A unit of level derived from the logarithm of the ratio between the value of a quantity and a reference value. For sound pressure level (L_p) the reference quantity is 2×10^{-5} N/m ² . The sound pressure level existing when microphone measured pressure is 2×10^{-5} N/m ² is 0 dB, the threshold of hearing.
L	Instantaneous value of Sound Pressure Level (L_p) or Sound Power Level (L_w).
Frequency	Number of cycles per second, measured in hertz (Hz), related to sound pitch.
A-weighting	Arithmetic corrections applied to values of L_p according to frequency. When logarithmically summed for all frequencies, the resulting single "A weighted value" becomes comparable with other such values from which a comparative loudness judgement can be made, then, without knowledge of frequency content of the source.
$L_{eq,T}$	Equivalent continuous level of sound pressure which, if it actually existed for the integration time period T of the measurement, would possess the same energy as the constantly varying values of L_p actually measured.
$L_{Aeq,T}$	Equivalent continuous level of A weighted sound pressure which, if it actually existed for the integration time period, T, of the measurement would possess the same energy as the constantly varying values of L_p actually measured.
$L_{n,T}$	L_p which was exceeded for n% of time, T.
$L_{An,T}$	Level in dBA which was exceeded for n% of time, T.
L_{Fmax}	The instantaneous maximum sound pressure level which occurred during the measurement. F indicates that the fast time-weighting is used.
L_{AFmax}	The instantaneous maximum A weighted sound pressure level which occurred during the measurement. F indicates that the fast time-weighting is used.
$L_{Ar,Tr}$	The rating level: the equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise.
Insertion Loss, IL	The reduction of noise level due to the presence of a noise control device such as an attenuator, excluding any regeneration noise created by its presence.
NR	The Noise Rating level . This is a single figure value derived by plotting a noise spectrum against a set of curves. The curve under which the spectrum fits is the resulting NR level.

APPENDIX B –MEASURED UNATTENDED NOISE LEVELS



APPENDIX C-ATTENUATOR INSERTION LOSS



PROJECT NAME: KINGS HOUSE MANCHESTER
DATE: 27/09/2024
CUSTOMER NAME: PURE VENT LTD

PROJECT No: 98424
SCHEDULE No: 14098424C2
ORDER No: 60868/3124/SP

Item	System Reference	Code	Suffix	DWG	L1	L2/D1	W	H	Vol	PD	Wt	No.	Performance, dB								
					mm	mm	mm	mm	m³/s	Pa	kg	Off.		63	125	250	500	1k	2k	4k	8k
1	BASEMENT																				
2	AHU 01 FRESH AIR	SP2038	G	A02G	600		720	555	0.4	20	41	1	IL	4	8	13	20	30	25	22	14
3	AHU 01 SUPPLY AIR	SL250	GJ	A02G	1200		450	200	0.4	30	29	1	IL	3	7	14	30	55	53	46	28
4	AHU 01 EXTRACT AIR	SL250	GJ	A02G	1200		450	200	0.45	30	29	1	IL	3	7	14	30	55	53	46	28
5	AHU 01 EXHAUST AIR	SP2038	G	A02G	600		720	555	0.45	20	41	1	IL	4	8	13	20	30	25	22	14
6																					
7	LOSSNAY 200 FRESH AIR	SL260	GJ	A02G	900		450	250	0.556	20	24	1	IL	2	4	9	21	36	30	27	16
8	LOSSNAY 200 SUPPLY AIR	SL260	GJ	A02G	1200		450	250	0.556	20	30	1	IL	2	5	11	27	46	39	34	21
9	LOSSNAY 200 EXTRACT AIR	SL260	GJ	A02G	1200		450	250	0.556	20	30	1	IL	2	5	11	27	46	39	34	21
10	LOSSNAY 200 EXHAUST AIR	SL260	GJ	A02G	900		450	250	0.556	20	24	1	IL	2	4	9	21	36	30	27	16



PROJECT NAME: KINGS HOUSE MANCHESTER
DATE: 05/06/2024

PROJECT No: 98424
SCHEDULE No: 13598424Q2

Item	System Reference	Code	Suffix	DWG	L1	L2/D	W	H	Vol	PD	Wt	No.	Performance, dB								
					mm	mm	mm	mm	m³/s	Pa	kg	Off.	63	125	250	500	1k	2k	4k	8k	
1	GROUND FLOOR																				
2	MEETING ROOM SUPPLY CTA	PL	G	A13G	900	200			0.08	5	10	1	IL	1	3	7	19	28	23	20	15
3	MEETING ROOM EXTRACT CTA	PL	G	A13G	900	200			0.08	5	10	1	IL	1	3	7	19	28	23	20	15
4	MAIN EXTRACT BRANCH CTA	SL	GJ	A02G	900		450	250	0.434	10	24	1	IL	2	4	9	21	36	30	27	16
5	MAIN SUPPLY BRANCH CTA	SL	GJ	A02G	900		450	250	0.434	10	24	1	IL	2	4	9	21	36	30	27	16
6	MAIN EXTRACT BRANCH CTA	SL	GJ	A02G	900		450	250	0.272	10	26	1	IL	4	9	16	28	46	42	36	22
7	EXTRACT BELLMOUTH CTA	SL	GE	A18G	900	250	400	305	0.1	10	30	1	IL	6	11	18	26	35	30	25	16
8	MEETING ROOM SUPPLY CTA	PL	G	A13G	900	180			0.042	5	9	1	IL	1	3	7	19	28	23	20	15
9	MEETING ROOM EXTRACT CTA	SL	GJN	A05G	900		200	150	0.042	10	9	1	IL	4	8	16	30	54	55	53	37
10																					
11	FIRST FLOOR																				
12	AT1 LOSSNAY INTAKE	PL	G	A13G	900	250			0.27	5	12	5	IL	2	3	7	18	25	19	17	13
13	AT2 LOSSNAY SUPPLY	SL	GE	A18G	900	250	400	305	0.27	30	30	5	IL	6	11	18	26	35	30	25	16
14	AT3 LOSSNAY EXTRACT	SL	GE	A18G	900	250	400	305	0.27	30	30	5	IL	6	11	18	26	35	30	25	16
15	AT4 LOSSNAY EXHAUST	PL	G	A13G	900	250			0.27	5	12	5	IL	2	3	7	18	25	19	17	13
16	3 PERSON MEETING SUPPLY CTA	PL	G	A13G	600	125			0.03	5	5	1	IL	1	2	6	16	23	19	17	12
17	3 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		150	150	0.03	10	9	1	IL	4	8	16	30	54	55	53	37
18	10 PERSON MEETING SUPPLY CTA	PL	G	A13G	900	200			0.08	5	10	1	IL	1	3	7	19	28	23	20	15
19	10 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		250	225	0.08	10	13	1	IL	5	11	19	31	51	51	47	33
20	PERIMETER DUCT SUPPLY CTA	PL	G	A13G	900	200			0.076	5	10	1	IL	1	3	7	19	28	23	20	15
21	PERIMETER DUCT SUPPLY CTA	PL	G	A13G	900	150			0.038	5	8	1	IL	1	3	7	19	28	23	20	15
22	12 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		250	225	0.08	10	13	1	IL	5	11	19	31	51	51	47	33
23	8 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		150	150	0.04	10	9	1	IL	4	8	16	30	54	55	53	37
24																					
25	SECOND FLOOR																				
26	AT1 LOSSNAY INTAKE	PL	G	A13G	900	250			0.27	5	12	5	IL	2	3	7	18	25	19	17	13
27	AT2 LOSSNAY SUPPLY	SL	GE	A18G	900	250	400	305	0.27	30	30	5	IL	6	11	18	26	35	30	25	16
28	AT3 LOSSNAY EXTRACT	SL	GE	A18G	900	250	400	305	0.27	30	30	5	IL	6	11	18	26	35	30	25	16
29	AT4 LOSSNAY EXHAUST	PL	G	A13G	900	250			0.27	5	12	5	IL	2	3	7	18	25	19	17	13
30	3 PERSON MEETING SUPPLY CTA	PL	G	A13G	600	125			0.03	5	5	1	IL	1	2	6	16	23	19	17	12
31	3 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		150	150	0.03	10	9	1	IL	4	8	16	30	54	55	53	37
32	10 PERSON MEETING SUPPLY CTA	PL	G	A13G	900	200			0.08	5	10	1	IL	1	3	7	19	28	23	20	15
33	10 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		250	225	0.08	10	13	1	IL	5	11	19	31	51	51	47	33
34	PERIMETER DUCT SUPPLY CTA	PL	G	A13G	900	200			0.076	5	10	1	IL	1	3	7	19	28	23	20	15
35	PERIMETER DUCT SUPPLY CTA	PL	G	A13G	900	150			0.038	5	8	1	IL	1	3	7	19	28	23	20	15
36	12 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		250	225	0.08	10	13	1	IL	5	11	19	31	51	51	47	33



PROJECT NAME: KINGS HOUSE MANCHESTER
DATE: 05/06/2024

PROJECT No: 98424
SCHEDULE No: 13598424Q2

Item	System Reference	Code	Suffix	DWG	L1	L2/ID	W	H	Vol	PD	Wt	No.	Performance, dB											
37	8 PERSON MEETING EXTRACT CTA	SL	GJN	A05G	900		150	150	0.04	10	9	1	IL	4	8	16	30	54	55	53	37			
38																								
39	THIRD FLOOR																							
40	AT1 LOSSNAY INTAKE	PL	G	A13G	900	250			0.27	5	12	5	IL	2	3	7	18	25	19	17	13			
41	AT2 LOSSNAY SUPPLY	SL	GE	A18G	900	250	400	305	0.27	30	30	5	IL	6	11	18	26	35	30	25	16			
42	AT3 LOSSNAY EXTRACT	SL	GE	A18G	900	250	400	305	0.27	30	30	5	IL	6	11	18	26	35	30	25	16			
43	AT4 LOSSNAY EXHAUST	PL	G	A13G	900	250			0.27	5	12	5	IL	2	3	7	18	25	19	17	13			
44	SUPPLY CTA	PL	G	A13G	900	250			0.102	5	12	1	IL	2	3	7	18	25	19	17	13			
45	SUPPLY CTA	PL	G	A13G	900	200			0.068	5	10	1	IL	1	3	7	19	28	23	20	15			
46	EXTRACT CTA	SL	GJN	A05G	900		150	150	0.034	10	9	1	IL	4	8	16	30	54	55	53	37			
47	EXTRACT CTA	SL	GJN	A05G	900		150	150	0.034	10	9	1	IL	4	8	16	30	54	55	53	37			
48																								
49	FOURTH FLOOR																							
50	AT1 LOSSNAY INTAKE	PL	G	A13G	900	250			0.27	5	12	4	IL	2	3	7	18	25	19	17	13			
51	AT2 LOSSNAY SUPPLY	SL	GE	A18G	900	250	400	305	0.27	30	30	4	IL	6	11	18	26	35	30	25	16			
52	AT3 LOSSNAY EXTRACT	SL	GE	A18G	900	250	400	305	0.27	30	30	4	IL	6	11	18	26	35	30	25	16			
53	AT4 LOSSNAY EXHAUST	PL	G	A13G	900	250			0.27	5	12	4	IL	2	3	7	18	25	19	17	13			
54	LOSSNAY 50 INTAKE	PL	G	A13G	600	200			0.105	5	7	2	IL	1	2	6	16	23	19	17	12			
55	LOSSNAY 50 SUPPLY	PL	G	A13G	900	200			0.105	5	10	2	IL	1	3	7	19	28	23	20	15			
56	LOSSNAY 50 EXTRACT	PL	G	A13G	900	200			0.105	5	10	2	IL	1	3	7	19	28	23	20	15			
57	LOSSNAY 50 EXHAUST	PL	G	A13G	600	200			0.105	5	7	2	IL	1	2	6	16	23	19	17	12			
58	SUPPLY CTA	PL	G	A13G	900	180			0.08	5	9	1	IL	1	3	7	19	28	23	20	15			
59	SUPPLY CTA	PL	G	A13G	900	180			0.06	5	9	1	IL	1	3	7	19	28	23	20	15			
60	EXTRACT CTA	SL	GJN	A05G	900		150	150	0.02	10	9	1	IL	4	8	16	30	54	55	53	37			
61	EXTRACT CTA	SL	GJN	A05G	900		250	150	0.06	10	11	1	IL	4	8	16	30	54	55	53	37			

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Registered Office: Beehive Mill, Jersey Street, Manchester M4 6JG

Registered in England and Wales, Company Number 08371474



24081-R01-JT-Kings House- Plant Noise Discharge 6a

Final Audit Report

2024-10-17

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By:	Ben Tomlin (ben@dbxacoustics.com)
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