

Client:
Project: DUB 53
Title: Noise Details at AHU Connections

Extract Unit		Return Air Inlet Connection							
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Return Fan Intake S.W.L	83	86	86	82	80	77	70	64	See Fan Curve
Insertion Loss due to Inlet Connection	0	0	3	0	0	1	1	1	
S.W.L @ Return Air Inlet Connection	83	86	86	82	80	76	69	63	
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
S.W.L @ Return Air Intake	83	86	86	82	80	76	69	63	
A Weighting	25	16	9	3	0	1	1	1	
A Weighted Octave Band	58	70	77	79	80	75	68	62	
	70		81		81		69		
	81				81				
A Weighted Power Level @ Return Air Inlet Connection	84								dB(A)

Extract Unit		Exhaust Air Outlet Connection							
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Return Fan Discharge S.W.L	88	86	88	82	79	72	65	57	See Fan Curve
Insertion Loss due to Discharge Connection	0	0	0	0	0	1	1	1	
S.W.L @ Return Air Outlet Connection	88	86	88	82	79	71	64	56	
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
S.W.L @ Return Air Outlet Connection	88	86	88	82	79	71	64	56	
A Weighting	25	16	9	3	0	1	1	1	
A Weighted Octave Band	63	70	79	79	79	70	63	55	
	71		82		80		64		
	82				80				
A Weighted Power Level @ Exhaust Air Outlet Connection	84								dB(A)

Title: Maximum Breakout Sound Power Level @ 1M from AHU Casing (@ Fan)

Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Fan Discharge S.W.L	88	86	88	82	79	72	65	57	See Fan Curve
Sound Reduction Index for AHU Casing	22	25	27	29	43	44	47	49	
Sound Reduction Index for 1.0M distance	5	5	5	5	5	5	5	5	
S.W.L @ 1.0m Outside AHU Casing	61	56	56	48	31	23	13	3	
A Weighting	25	16	9	3	0	1	1	1	
A Weighted Octave Band	36	40	47	45	31	22	12	2	
	41		49		32		12		
	50				32				
Maximum Break Out sound Power Level @ 1.0M distance from side wall of unit	50								dB(A)

Client:
Project: DUB053
Title: Noise Details at AHU Connections

DH Extract Unit		Return Air Inlet Connection								
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000		
Return Fan Intake S.W.L	78	79	75	70	68	65	61	65	See Fan Curve	
Additional Noise due to Fan amplification	11	11	11	11	11	11	11	11		
Insertion Loss due to Backdraft Damper	2	2	2	3	3	4	4	6		
S.W.L @ Return Air Inlet Connection	87	88	84	78	76	72	67	70		
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000		
S.W.L @ Return Air Intake	87	88	84	78	76	72	67	70		
A Weighting	25	16	9	3	0	1	1	1		
A Weighted Sound Power Level	62	72	75	75	76	71	66	69		
	72		78		77		71			
	79			78						
A Weighted Power Level @ Return Air Inlet Connection	82								dB(A)	

DH Extract Unit		Exhaust Air Outlet Connection								
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000		
Return Fan Discharge S.W.L	81	83	80	80	76	73	70	69	See Fan Curve	
Additional Noise due to Fan amplification	5	5	5	5	5	5	5	5		
Insertion Loss due to Attenuator	7	11	16	26	38	30	23	17		
Insertion Loss due to Discharge Chute	2	3	3	4	4	4	6	5		
S.W.L @ Return Air Outlet Connection	77	74	66	55	39	44	46	52		
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000		
S.W.L @ Return Air Outlet Connection	77	74	66	55	39	44	46	52		
A Weighting	25	16	9	3	0	1	1	1		
A Weighted Sound Power Level	52	58	57	52	39	44	45	51		
	59		58		44		52			
	62			53						
A Weighted Power Level @ Exhaust Air Outlet Connection	63								dB(A)	

Title:	Maximum Breakout Sound Power Level Through Unit Casing									
Octave Band centre frequency (Hz)	63	125	250	500	1000	2000	4000	8000		
Supply Fan Discharge S.W.L	81	83	80	80	76	73	70	69	See Fan Curve	
Sound Reduction Index for AHU Casing	22	25	27	29	43	44	47	49		
S.W.L @ Outside AHU Casing	59	58	53	51	33	29	23	20		
A Weighting	25	16	9	3	0	1	1	1		
A Weighted Octave Band	34	42	44	48	33	28	22	19		
	43		49		34		24			
	50			34						
Break Out Sound Power Level	50								dB(A)	

Client:	
Project:	DUB053
Title:	Noise Details at AHU Connections

AHU 01		Fresh Air Inlet Connection								
Octave Band centre frequency (Hz)		63	125	250	500	1000	2000	4000	8000	
Supply Fan Intake S.W.L		84	83	79	74	72	69	65	65	See Fan Curve
Noise Increase due to Fan Amplification		11	11	11	11	11	11	11	11	
Insertion Loss due to Merv 8 Filters		0	1	1	1	2	3	3	3	
Insertion Loss due to Merv 13 Filters		1	1	2	2	3	4	4	6	
Insertion Loss due to Evaporative Cooler		3	2	2	3	5	6	12	15	
S.W.L @ Fresh Air Connection		91	90	85	79	73	67	57	52	
Octave Band centre frequency (Hz)		63	125	250	500	1000	2000	4000	8000	
S.W.L @ Fresh Air Connection		91	90	85	79	73	67	57	52	
A Weighting		25	16	9	3	0	1	1	1	
Sound Power Level @ Fresh Air Connection		64								
		75		79		74		57		
		80				74				
A Weighted Power Level @ Fresh Air Connection		81								dB(A)

AHU 01		Supply Air Outlet Connection								
Octave Band centre frequency (Hz)		63	125	250	500	1000	2000	4000	8000	
Supply Fan Discharge S.W.L		85	87	84	84	80	77	74	73	See Fan Curve
Noise Increase due to Fan Amplification		11	11	11	11	11	11	11	11	
S.W.L @ Supply Air Outlet Connection		96	98	95	95	91	88	85	84	
Octave Band centre frequency (Hz)		63	125	250	500	1000	2000	4000	8000	
S.W.L @ Supply Air Outlet Connection		96	98	95	95	91	88	85	84	
A Weighting		25	16	9	3	0	1	1	1	
Sound Power Level @ Supply Air Connection		71								
		82		93		92		87		
		93				93				
A Weighted Power Level @ Supply Air Connection		96								dB(A)

Title:	Maximum Breakout Sound Power Level Through Unit Casing									
Octave Band centre frequency (Hz)		63	125	250	500	1000	2000	4000	8000	
Supply Fan Discharge S.W.L		81	83	80	80	76	73	70	69	See Fan Curve
Sound Reduction Index for AHU Casing		22	25	27	29	43	44	47	49	
S.W.L @Outside AHU Casing		59	58	53	51	33	29	23	20	
A Weighting		25	16	9	3	0	1	1	1	
A Weighted Octave Band		34	42	44	48	33	28	22	19	
		43		49		34		24		
		50				34				
Break Out Sound Power Level		50								dB(A)