



Project: Q10522 - Royal Berkshire Archives, 9 Coley Avenue, Reading RG1 6AF

Client :

Revision: Revision A

Date : 5th December 2025

Item Calculation 01 - Noise to Old Registry Office - 07:00 to 19:00 - Proposed Plant - Target Level - 33dBA

AHU01	Air Handling Unit - AHU01 - Fresh Air Intake - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Fan Lw - AirCRAFT Air Handling - Manufacturers Data		75	70	83	77	72	69	66	64	79
		System Loss (Ducting and Bends)	0	0	0	0	0	0	0	0	
		End Reflection	-3	0	0	0	0	0	0	0	
	26	Distance to Listener	-40	-40	-40	-40	-40	-40	-40	-40	
		Directivity (90 Degrees)	2	2	1	0	-2	-5	-10	-15	
		Source Location (Junction)	6	6	6	6	6	6	6	6	
		Screening (Line of Sight)	-5	-5	-5	-5	-5	-5	-5	-5	
		Façade Effect	3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Fresh Air Intake Only		38	36	48	41	34	28	20	13	43
	Proposed Attenuator - Insertion Loss - KSD6060 - 1500mm Long		-7	-14	-21	-26	-30	-19	-15	-14	
	Resultant Noise Level from AHU Fresh Air Intake with Mitigating Measures		31	22	27	15	4	9	5	-1	20
AHU01	Air Handling Unit - AHU01 - Exhaust - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Fan Lw - AirCRAFT Air Handling - Manufacturers Data		71	75	75	74	74	70	66	65	78
		System Loss (Ducting and Bends)	0	0	0	0	0	0	0	0	
		End Reflection	-3	0	0	0	0	0	0	0	
	26	Distance to Listener	-40	-40	-40	-40	-40	-40	-40	-40	
		Directivity (90 Degrees)	2	2	1	0	-2	-5	-10	-15	
		Source Location (Junction)	6	6	6	6	6	6	6	6	
		Screening (Line of Sight)	-5	-5	-5	-5	-5	-5	-5	-5	
		Façade Effect	3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Exhaust Only		34	41	40	38	36	29	20	14	40
	Proposed Attenuator - Insertion Loss - KSD6060 - 1500mm Long		-7	-14	-21	-26	-30	-19	-15	-14	
	Resultant Noise Level from AHU Exhaust with Mitigating Measures		27	27	19	12	6	10	5	0	17
AHU01	Air Handling Unit - AHU01 - Casing Breakout - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Fan Lw - AirCRAFT Air Handling - Manufacturers Data		61	52	61	52	54	46	39	37	57
	26	Distance to Listener	-40	-40	-40	-40	-40	-40	-40	-40	
		Source Location (Plane)	3	3	3	3	3	3	3	3	
		Screening (Hit and Miss Fencing)	-5	-5	-5	-5	-5	-5	-5	-5	
		Façade Effect	3	3	3	3	3	3	3	3	
		Estimated Lp at Listener Exhaust Only	22	13	22	13	15	7	0	-2	18
AHU02	Air Handling Unit - AHU02 - Fresh Air Intake - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Fan Lw - AirCRAFT Air Handling - Manufacturers Data		75	70	83	77	72	69	66	64	79
		System Loss (Ducting and Bends)	0	0	0	0	0	0	0	0	
		End Reflection	-3	0	0	0	0	0	0	0	
	22	Distance to Listener	-38	-38	-38	-38	-38	-38	-38	-38	
		Directivity (90 Degrees)	2	2	1	0	-2	-5	-10	-15	
		Source Location (Junction)	6	6	6	6	6	6	6	6	
		Screening (Line of Sight)	-5	-5	-5	-5	-5	-5	-5	-5	
		Façade Effect	3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Fresh Air Intake Only		40	38	50	43	36	30	22	15	45
	Proposed Attenuator - Insertion Loss - KSD6060 - 1500mm Long		-7	-14	-21	-26	-30	-19	-15	-14	
	Resultant Noise Level from AHU Fresh Air Intake with Mitigating Measures		33	24	29	17	6	11	7	1	22
AHU02	Air Handling Unit - AHU02 - Exhaust - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Fan Lw - AirCRAFT Air Handling - Manufacturers Data		71	75	75	74	74	70	66	65	78
		System Loss (Ducting and Bends)	0	0	0	0	0	0	0	0	
		End Reflection	-3	0	0	0	0	0	0	0	
	22	Distance to Listener	-38	-38	-38	-38	-38	-38	-38	-38	
		Directivity (90 Degrees)	2	2	1	0	-2	-5	-10	-15	
		Source Location (Junction)	6	6	6	6	6	6	6	6	
		Screening (Line of Sight)	-5	-5	-5	-5	-5	-5	-5	-5	
		Façade Effect	3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Exhaust Only		36	43	42	40	38	31	22	16	42
	Proposed Attenuator - Insertion Loss - KSD6060 - 1500mm Long		-7	-14	-21	-26	-30	-19	-15	-14	
	Resultant Noise Level from AHU Exhaust with Mitigating Measures		29	29	21	14	8	12	7	2	19
AHU02	Air Handling Unit - AHU02 - Casing Breakout - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Fan Lw - AirCRAFT Air Handling - Manufacturers Data		61	52	61	52	54	46	39	37	57
	26	Distance to Listener	-40	-40	-40	-40	-40	-40	-40	-40	
		Source Location (Plane)	3	3	3	3	3	3	3	3	
		Screening (Hit and Miss Fencing)	-5	-5	-5	-5	-5	-5	-5	-5	
		Façade Effect	3	3	3	3	3	3	3	3	
		Estimated Lp at Listener Exhaust Only	22	13	22	13	15	7	0	-2	18
	Cumulative Noise Level - with No Mitigating Measures - AHU's Only		44	46	53	47	42	36	27	21	49
	Cumulative Noise Level - with Mitigating Measures - AHU's Only		37	32	33	22	19	18	13	8	27

CU01	Condensing Unit - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Unit Lp at 1 metre - Mitsubishi PUZ-ZM250 - Manufacturers Data		71	61	61	61	56	53	49	42	62
	Additional Distance to Listener	23 m	-28	-28	-28	-28	-28	-28	-28	-28	
	Allowance for Intermittency		0	0	0	0	0	0	0	0	
	Additional Surfaces (0)		0	0	0	0	0	0	0	0	
	Screening		0	0	0	0	0	0	0	0	
	Façade Effect		3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Condensing Unit Only		46	36	36	36	31	28	24	17	37
CU02	Condensing Unit - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Unit Lp at 1 metre - Mitsubishi PUZ-ZM250 - Manufacturers Data		71	61	61	61	56	53	49	42	62
	Additional Distance to Listener	25 m	-28	-28	-28	-28	-28	-28	-28	-28	
	Allowance for Intermittency		0	0	0	0	0	0	0	0	
	Additional Surfaces (0)		0	0	0	0	0	0	0	0	
	Screening		0	0	0	0	0	0	0	0	
	Façade Effect		3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Condensing Unit Only		46	36	36	36	31	28	24	17	37
CU03	Condensing Unit - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Unit Lp at 1 metre - Mitsubishi PUZ-ZM250 - Manufacturers Data		71	61	61	61	56	53	49	42	62
	Additional Distance to Listener	27 m	-29	-29	-29	-29	-29	-29	-29	-29	
	Allowance for Intermittency		0	0	0	0	0	0	0	0	
	Additional Surfaces (0)		0	0	0	0	0	0	0	0	
	Screening		0	0	0	0	0	0	0	0	
	Façade Effect		3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Condensing Unit Only		45	35	35	35	30	27	23	16	36
CU04	Condensing Unit - Atmospheric Noise		63	125	250	500	1k	2k	4k	8k	dBA
	Unit Lp at 1 metre - Mitsubishi PUZ-ZM250 - Manufacturers Data		71	61	61	61	56	53	49	42	62
	Additional Distance to Listener	29 m	-30	-30	-30	-30	-30	-30	-30	-30	
	Allowance for Intermittency		0	0	0	0	0	0	0	0	
	Additional Surfaces (0)		0	0	0	0	0	0	0	0	
	Screening		0	0	0	0	0	0	0	0	
	Façade Effect		3	3	3	3	3	3	3	3	
	Estimated Lp at Listener Condensing Unit Only		44	34	34	34	29	26	22	15	35
	Cumulative Noise Level - with No Mitigating Measures - Condensing Units Only		51	41	41	41	36	33	29	22	42
	Proposed Attenuator - WSD300 Acoustic Louvres		-5	-5	-7	-12	-16	-19	-15	-15	
	Resultant Noise Level from AHU Exhaust with Mitigating Measures		46	36	34	29	20	14	14	7	31
	Cumulative Noise Level - with No Mitigating Measures - All Plant		52	48	53	48	43	38	31	25	50
	Cumulative Noise Level - with Mitigating Measures		47	38	37	30	23	19	17	11	32