



Technical Report

DAA16033025

30th May 2016

Dr R Mittal and Partners.

**Milman Road Heath Centre, Milman Road,
Reading RG2 0AR**

Planning Compliance Report

ISSUE 2

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This report has been compiled by Deane Austin Associates LLP (DAA) with all reasonable skill, care and diligence in accordance with generally accepted acoustic consultancy principles. Information contained in this document contains confidential and commercially sensitive information and shall not be disclosed to third parties.

1.0 EXECUTIVE SUMMARY

- DAA has been commissioned by the Client to assess noise emissions from the proposed new air conditioning plant at Milman Road Surgery, Reading.
- A noise survey has been carried in the vicinity to establish existing background noise levels. The nearest residential properties are located in Milman Road.
- The assessment is required to provide evidence that noise emissions from the proposed new external condensers comply with Reading Borough Council's acoustic requirements.
- This revision includes noise emission calculations which have been adjusted to account for intermittent running and low noise setting for the units on the Northern Elevation.
- The north elevation also accounts for the removal of six condensers previously located on the western elevation.
- Calculations using manufacturer's sound level data confirm that sound level for the condensers will be below background:
Eastern elevation -10dB below background.
Northern elevation -11dB below background.
These levels comply with Reading Borough Council's requirement of 10dB below background noise.

2.0 INTRODUCTION

New external air conditioning condenser units are proposed to be installed on the East & North elevations of Milman Road Surgery.

The report is required to support the planning application

This report presents results of the sound level survey and noise emission assessment and includes:

- Review of Reading Borough Council's Noise Policy.
- Measurements of existing background noise levels.
- Noise emission review.
- Review of any noise mitigation measures

3.0 SURVEY PROCEDURE & EQUIPMENT

The survey was carried out in Milman Road.

Measurements of consecutive 15 minute samples of L_{Aeq} and L_{A90} sound pressure levels were recorded between 13:00 hours on Tuesday 8th March and 14:00 on 9th March 2016.

The survey was carried out using a CEL 490 data logging precision sound level meter. Serial No: 056154.

The calibration of the sound level meter was verified before and after use. No calibration drift was recorded.

The weather during the survey was generally overcast with light winds. These conditions were suitable for the measurement of environmental noise.

Measurements were made generally in accordance with BS 744:1991 '*Description and measurement of environmental noise Part 2*'.

4.0 RESULTS:

Table 1 summarises the recorded background noise level.

Chart 1 shows the L_{Aeq} , L_{A90} sound pressure levels as time history.

5.0 DISCUSSION

The residual background noise climate at the property is predominately traffic noise. There is an increase of local traffic noise in the morning and afternoon associated with the Primary School at the end of the road.

The GP Surgery opening hours are 08:00 to 18:30 Monday, Tuesday, Thursday & Friday. 07:00 to 18:30 on Wednesday & 08:00 to 12:30 on Saturday. The Surgery is closed on Sunday.

The proposed new condenser units will potentially operate during the above times depending on the use of the consulting rooms and climate operating settings. The lowest recorded background noise levels are summarised in Table 1 and Chart 1.

Lowest recorded L_{A90} and L_{Aeq} background noise levels:

Monitoring period	$L_{A90(15)}$	$L_{Aeq (15)}$
07:00 – 18:30	49	52

6.0 DESIGN CRITERIA

6.1 Local Authority Requirements:

The Surgery has a Church Centre and Primary School on the West elevation.

The nearest noise sensitive properties are on the Eastern and Northern elevations.

It is important that noise emission from the air cooled condenser does not cause a noise nuisance or loss of amenity to these and adjacent properties.

Reading Council have confirmed that they would expect the new A/C plant is 10dB below background noise 1m outside the nearest noise sensitive window. Where this is not possible the Council may consider a concession.

7.0 REVIEW OF NOISE IMPACT

It is proposed to install 4No condenser units located on the eastern elevation and 6No on the northern elevation.

The locations are indicated on the elevation drawings in the appendix.

The plant operating period shall be limited to the opening hours of the Surgery.

7.1 Summary of Condenser Units:

Mitsubishi Model: MUZ & PUMY.

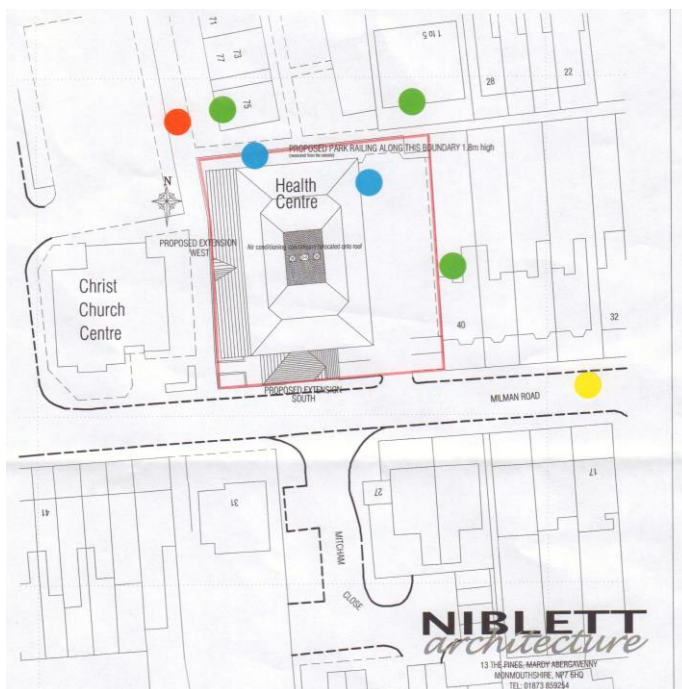
Item	Model	Hz	125	250	500	1k	2k	4k	L _{WA}
1	SF25	dB	56	51	49	46	44	38	58
2	SF25	dB	56	51	49	46	44	38	58
3	SF25	dB	56	51	49	46	44	38	58
4	SF50	dB	63	58	53	51	47	42	65
5	SF50	dB	63	58	53	51	47	42	65
6	SF50	dB	63	58	53	51	47	42	65
7	SF50	dB	63	58	53	51	47	42	65
8	SF71	dB	62	59	54	52	48	43	65
9	SF25	dB	56	51	49	46	44	38	58
10	P140	dB	63	57	53	48	43	38	64

Sound Power Levels (dB 10⁻¹² watts)

7.2 Predicted Noise Impact:

The nearest residential noise sensitive windows are located approximately 17 metres away from the condensers located on the eastern elevation and 10 metres on the northern elevation.

Site Plan:



KEY:

- Test Location
- Sensitive Windows
- Condenser Locations

The following tables summarise the noise impact at neighbouring residential properties.

7.3 Eastern Elevation:

Deane Austin Associates LLP				NOISE EMISSION CALCULATION										
EAST ELEVATION														
ITEM	PARAMETER		HZ		125	250	500	1K	2K	4K	8K	dBA		
1	Schedule of Plant													
	Mitsubishi Condenser Units:													
1.1	MUZ-SF25VE	Swl	dB	+	56	51	49	46	44	38		58		
1.2	MUZ-SF25VE	Swl	dB	+	56	51	49	46	44	38		58		
1.3	MUZ-SF50VE	Swl	dB	+	62	59	54	52	48	43		65		
1.4	MUZ-SF25VE	Swl	dB	+	56	51	49	46	44	38		58		
1.5	Combined SWL	Swl	dB	+	64	61	57	54	51	46		67		
1.6	Diversity Factor	Swl	dB	-	3	3	3	3	3	3		3		
1.7	Low noise setting	Swl	dB	-	0	0	0	0	0	0		0		
1.8	Compensation for 6No units removed from the West Face.	Swl	dB	-	0	0	0	0	0	0		0		
1.9	Revised Combined SWL	Swl	dB	-	61	58	54	51	48	43		64		
2.0	Distance to reference point Metres:	17	dB	-	33	33	33	33	33	33		33		
3.0	Sound Pressure Level 1m outside the nearest adjacent noise seneitive window		dB	+	32	28	24	22	19	13		31		
4.0	Façade correction	3.0	dB	-	3	3	3	3	3	3		3		
5.0	Direct Lp at reference point		dB	+	35	31	27	25	22	16		34		
6.0	Fans sound charcter correction		dB	+	5	5	5	5	5	5		5		
7.0	Rating level correction. Specific Noise Level:	LEQ	dB	+	40	36	32	30	27	21		39		
8.0	Lowest Background Noise Levels: L _{A90}	LA90	dB	+								49		
	Daytime 07:30 - 18:30 hours													
	e&oe													

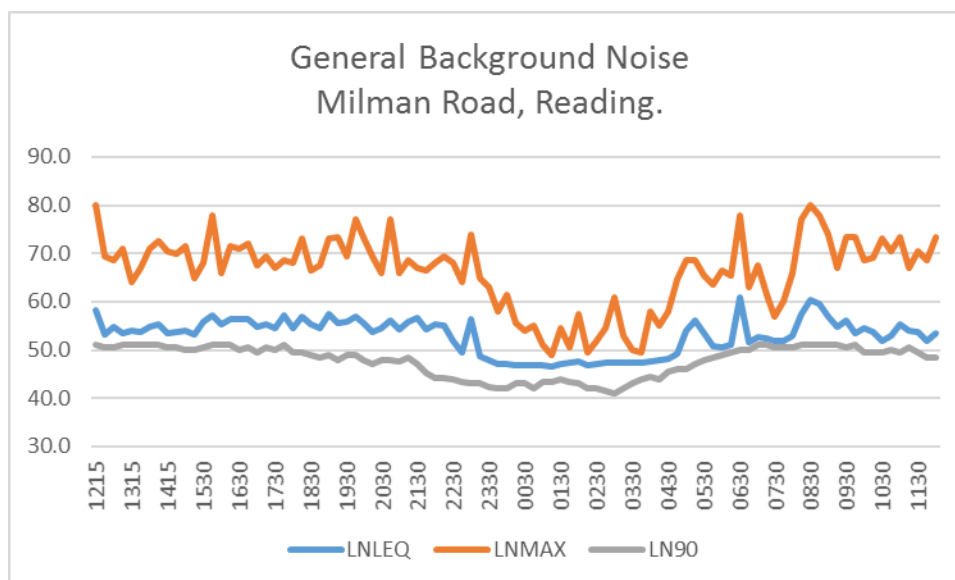
7.4 Northern Elevation:

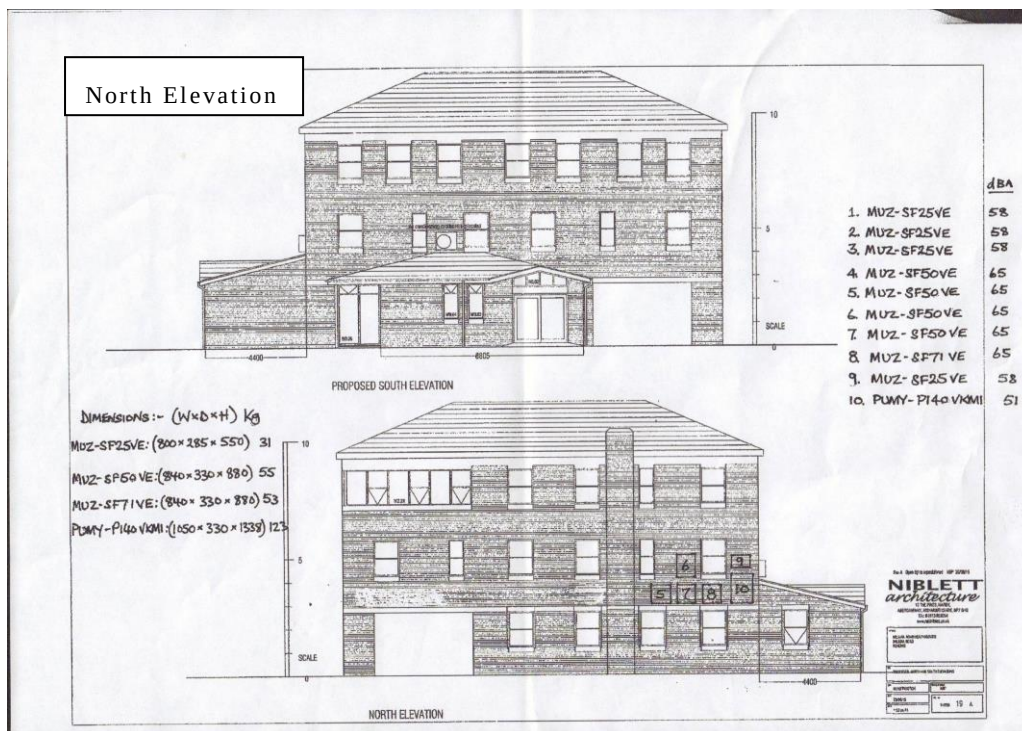
Deane Austin Associates LLP				NOISE EMISSION CALCULATION										
NORTH ELEVATION														
ITEM	PARAMETER				HZ		125	250	500	1K	2K	4K	8K	dBA
1	Schedule of Plant													
	Mitsubishi Condenser Units:													
1.1	MUZ-SF50VE	Swl	dB	+	63	58	53	51	47	42				65
1.2	MUZ-SF50VE	Swl	dB	+	63	58	53	51	47	42				65
1.3	MUZ-SF71VE	Swl	dB	+	62	59	54	52	48	43				65
1.4	MUZ-SF25VE	Swl	dB	+	56	51	49	46	44	38				58
1.5	PUMY-P140VK	Swl	dB	+	63	57	53	48	43	38				64
1.6	Combined SWL	Swl	dB	+	68	63	59	56	52	47				71
1.7	Diversity Factor	Swl	dB	-	3	3	3	3	3	3				3
1.8	Low noise setting	Swl	dB	-	7	7	7	7	7	7				7
1.9	Compensation for 6No units removed from the west face	Swl	dB	-	3	3	3	3	3	3				3
1.10	Revised Combined SWL	Swl	dB	-	58	53	49	46	42	37				58
2.0	Distance to reference point Metres:	10	dB	-	28	28	28	28	28	28				28
3.0	Sound Pressure Level 1m outside the nearest adjacent noise seneitive window		dB	+	35	29	25	20	15	10				30
4.0	Façade correction	3.0	dB	+	3	3	3	3	3	3				3
5.0	Direct Lp at reference point		dB	+	38	32	28	23	18	13				33
6.0	Fan sound character correction		dB	+	5	5	5	5	5	5				5
7.0	Rating level correction. Specific Noise Level:	LEQ	dB	+	43	37	33	28	23	18				38
8.0	Lowest Background Noise Levels: L _{A90}	LA90	dB	+										49
	Daytime 07:30 - 18:30 hours													
	e&oe													

Table 1. Summary – Background Noise Climate.

TIME	LNLEQ	LNMAX	LN90	TIME	LNLEQ	LNMAX	LN90	TIME	LNLEQ	LNMAX	LN90	TIME	LNLEQ	LNMAX	LN90
1215	56.2	60.0	51.0	1645	54.4	67.5	48.5	0100	46.7	51.0	43.5	0700	52.6	67.5	51.0
1230	53.3	69.5	50.5	1900	57.4	73.0	49.0	0115	46.6	49.0	43.5	0715	52.5	61.5	51.0
1245	54.8	68.5	50.5	1915	55.6	73.5	48.0	0130	47.2	54.5	44.0	0730	51.8	57.0	50.5
1300	53.4	71.0	51.0	1930	55.9	69.5	49.0	0145	47.3	50.5	43.5	0745	51.9	60.0	50.5
1315	54.0	64.0	51.0	1945	56.8	77.0	49.0	0200	47.6	57.5	43.0	0800	52.9	66.0	50.5
1330	53.7	67.0	51.0	2000	55.6	73.5	48.0	0215	46.9	49.5	42.0	0815	57.5	77.0	51.0
1345	54.9	71.0	51.0	2015	53.6	69.5	47.0	0230	47.1	52.0	42.0	0830	60.5	80.0	51.0
1400	55.2	72.5	51.0	2030	54.6	66.0	48.0	0245	47.3	54.5	41.5	0845	59.6	78.0	51.0
1415	53.4	70.5	50.5	2045	56.1	77.0	48.0	0245	47.3	54.5	41.5	0900	56.9	74.0	51.0
1430	53.7	70.0	50.5	2100	54.2	66.0	47.5	0300	47.3	61.0	41.0	0915	54.8	67.0	51.0
1445	53.9	71.5	50.0	2115	55.9	68.5	48.5	0315	47.4	53.0	42.0	0930	56.2	73.5	50.5
1500	53.3	65.0	50.0	2130	56.6	67.0	47.2	0330	47.4	50.0	43.1	0945	53.5	73.5	51.0
1530	55.8	68.0	50.5	2145	54.3	66.5	45.2	0345	47.4	49.5	44.0	1000	54.5	68.5	49.5
1545	57.3	78.0	51.0	2200	55.4	68.0	44.2	0400	47.6	58.0	44.5	1015	53.8	69.0	49.5
1600	55.3	66.0	51.0	2215	55.1	69.5	44.1	0415	48.0	55.0	44.0	1030	52.0	73.0	49.5
1615	56.5	71.5	51.0	2230	51.9	68.0	44.0	0430	48.1	58.0	45.4	1045	53.0	70.5	50.0
1630	56.4	71.0	50.0	2245	49.6	64.0	43.5	0445	49.3	64.5	46.0	1100	55.2	73.5	49.5
1645	56.3	72.0	50.5	2300	56.5	74.0	43.0	0500	54.0	68.5	46.0	1115	54.0	67.0	50.5
1700	54.9	67.5	49.5	2315	48.7	65.0	43.0	0515	56.1	68.5	47.2	1130	53.6	70.5	49.5
1715	55.3	69.5	50.5	2330	47.9	63.0	42.4	0530	53.5	65.5	48.0	1145	51.8	68.5	48.5
1730	54.6	67.0	50.0	2345	47.1	58.0	42.0	0545	50.9	63.5	48.4	1200	53.5	73.5	48.5
1745	57.1	68.5	51.0	0000	47.2	61.5	42.0	0600	50.6	66.5	49.0				
1800	54.4	68.0	49.5	0015	46.9	55.5	43.2	0615	51.1	65.5	49.5				
1815	56.8	73.0	49.5	0030	46.9	54.0	43.0	0630	61.0	78.0	50.0				
1830	55.2	66.5	49.0	0045	46.8	55.0	42.0	0645	51.6	63.0	50.0				

Chart 1. Time History.





East Elevation

