

BC010013

Co-Operative Store

124 Henley Road,
Caversham,
Reading. Berkshire. RG4 6DH.

Acoustic Selection Criterion Report

October 2014



Box Clever Engineering Ltd

60 Churchill Square Business Centre
Kings Hill
West Malling
Kent. ME19 4YU

+44 (0) 1732 523 550

Version Control

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Authorisation

Report Prepared By:	Rhys Scrivener	Date:	11 th October 2014
Report Checked By:	--	Date:	--
Report Approved By:	Kevin Broughton	Date:	11 th October 2014

1. EXECUTIVE SUMMARY

1.1. Instruction

Box Clever Engineering Ltd has been instructed by BJA Refrigeration Consulting Engineers Ltd to undertake an environmental noise survey at the Co-operative store at 124 Henley Road, Caversham in Reading to determine the specification in terms noise to allow the selection of the refrigeration and air conditioning equipment.

1.2. Key Locations

Key Location	Latitude	Longitude	Description of Location
Plant Area	51.471051	-0.958647	On the rear wall of the flat roof at the rear of the store (service yard)
Assessment Position	51.470974	-0.958649	Residential properties at the rear of the site. (Also residential at rear)

1.3. Maximum Noise Levels

Proposed Equipment	07:00 – 23:00 (Day Time) 32°C Ambient		23:00 – 07:00 (Night Time) 25°C Ambient	
All Plant	L _{WA} 79 dB	L _{P(10)} 48 dB	L _{WA} 62 dB	L _{P(10)} 31 dB

Sound Power Level (L_{WA}) - Sound Pressure Level at 10m (L_{P(10)}) British Standard 13487: 2003 including Annex C.

1.4. Background Noise Levels

Background Noise Level	07:00 – 23:00 (Day Time) 32°C Ambient	23:00 – 07:00 (Night Time) 25°C Ambient
	L _{A90} , 16 hours 48 dB	L _{A90} , 8 hours 36 dB

Background Noise Levels as defined in British Standard 4142:1997. Reference Level of $2 \times 10^{-5} \text{Nm}^{-2}$.

1.5. Proposed British Standard 4142:1997 Assessment

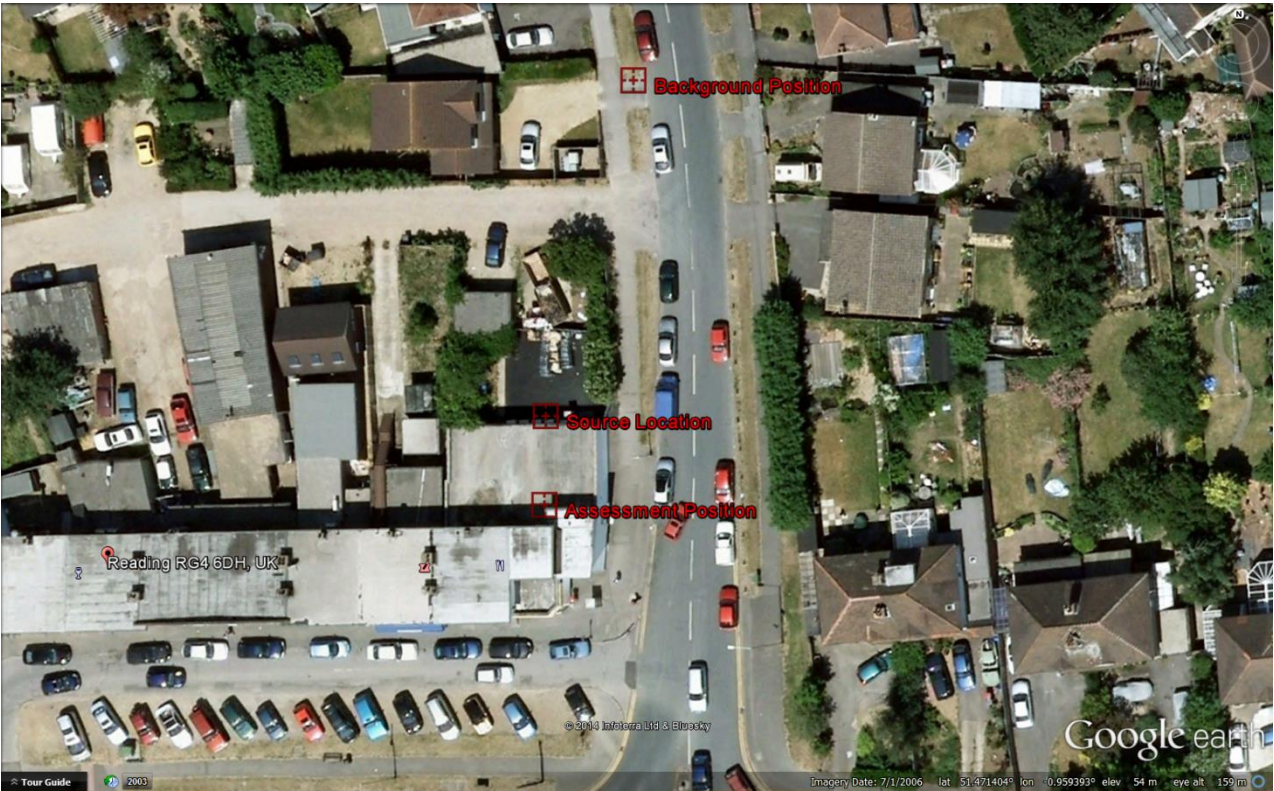
BS 4142: 1997	07:00 – 23:00 (Day Time) 32°C Ambient	23:00 – 07:00 (Night Time) 25°C Ambient
Rating Noise Level	L _{Aeq,1 hours} 43 dB	L _{Aeq,5 minutes} 26 dB
Background Noise Level	L _{A90} , 16 hours 48 dB	L _{A90} , 8 hours 36 dB
Assessment	-5 dB (Below Complaints Marginal)	-10 dB (Below Complaints Marginal)

1.6. Required Noise Control Measures

Noise Control Element	Description of Works included to Achieve the BS 4142:1997 Assessment
Refrigeration Condenser	No additional works should be required to the AC and Refrigeration Condenser
Air Conditioning Unit	
Screening	No screening is required – Flat roof provides screening to flats above
Other	Reading Borough Council will only accept -10 dB at Night. Have taken the point to appeal and won. Will usually accept -5 dB during the daytime.

2. SITE LAYOUT

2.1. Key Locations



Plant Area	51.471051	-0.958647	On the rear wall of the flat roof at the rear of the store (service yard)
Assessment Position	51.470974	-0.958649	Residential properties at the rear of the site. (Also residential at rear)
Background Position	51.471341	-0.958525	About 75m down Chiltern Road from the Site

2.2. Key Photographs



View of the Front of the Store (Google Streets)



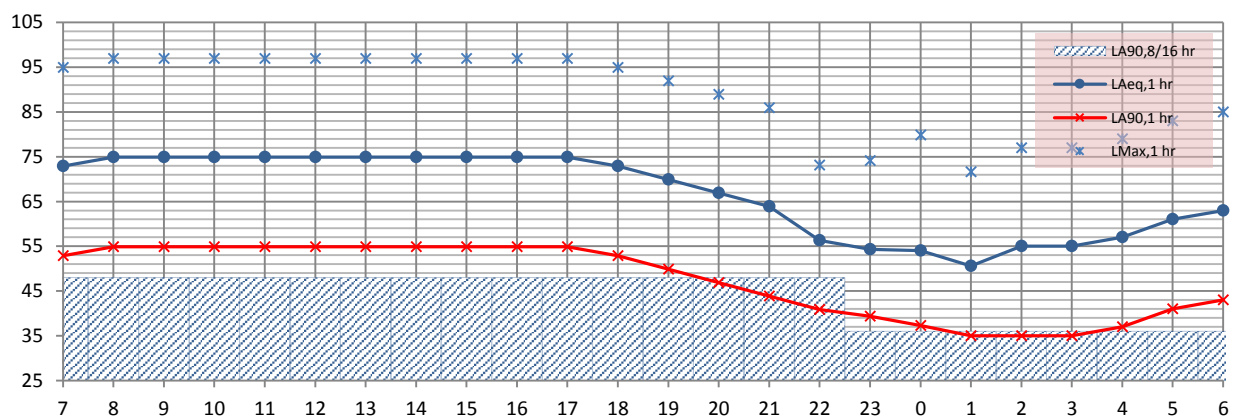
AC Units Mounted on Rear Wall

3. BACKGROUND NOISE LEVELS

3.1. 22:00 on Thursday 9th October 2014 and 02:00 on Friday 10th October 2014

Time Period	L _{Max}	Minimum 5 minute			1 Hour			Day and Night		
		L _{Aeq,5 min}	L _{A10, 5 min}	L _{A90, 5 min}	L _{Aeq, 1 hour}	L _{A10, 1 hour}	L _{A90, 1 hour}	L _{Aeq, t}	L _{A10, t}	L _{A90, 16hours}
07:00 – 08:00	95	65	67	55	73	75	53	72	74	48
08:00 – 09:00	97	67	69	57	75	77	55			
09:00 – 10:00	97	67	69	57	75	77	55			
10:00 – 11:00	97	67	69	57	75	77	55			
11:00 – 12:00	97	67	69	57	75	77	55			
12:00 – 13:00	97	67	69	57	75	77	55			
13:00 – 14:00	97	67	69	57	75	77	55			
14:00 – 15:00	97	67	69	57	75	77	55			
15:00 – 16:00	97	67	69	57	75	77	55			
16:00 – 17:00	97	67	69	57	75	77	55			
17:00 – 18:00	97	67	69	57	75	77	55			
18:00 – 19:00	95	65	67	55	73	75	53			
19:00 – 20:00	92	62	64	52	70	72	50	56	62	36
20:00 – 21:00	89	59	61	49	67	69	47			
21:00 – 22:00	86	56	58	46	64	66	44			
22:00 – 23:00	73.1	52.0	53.8	39.2	56.3	57.0	40.9			
23:00 – 00:00	74.1	47.9	50.1	38.0	54.3	54.2	39.4			
00:00 – 01:00	79.8	47.3	49.4	36.2	54.0	54.1	37.3			
01:00 – 02:00	71.6	40.6	39.4	33.5	50.6	48.6	35.0			
02:00 – 03:00	77	47	49	37	55	57	35			
03:00 – 04:00	77	47	49	37	55	57	35			
04:00 – 05:00	79	49	51	39	57	59	37			
05:00 – 06:00	83	53	55	43	61	63	41			
06:00 – 07:00	85	55	57	45	63	65	43			

Sound Pressure Levels, dB. Reference level of $2 \times 10^{-5} \text{ Nm}^{-2}$



END OF REPORT