

KR05622

Barnham Co-Op

Criterion Report...

Standard: British Standard 4142: 2014

Site: Barnham Co-Op

Address: 3-6 The Square

Barnham

West Sussex

Postcode: PO22 0HB

Customer: AB Group Ltd

Address: (South) Bank Chambers

2 Church Street

Reigate

Surrey

Postcode: RH2 0AN

Issue: v1.0

Date: 24th January 2017

Status: Current Document

KR Associates (UK) Ltd

Quietly confident...



Revisions...

KR05622		Project	Barnham Co-Op		
		Title	Criterion Report - Proposed Additional Plant		
		Standard	British Standard 4142: 2014		
Issue	Date	Details of Revision			
v1.0	24/01/2017	Description	Internal Criterion Report - Not for Issue to Local Authority		
		Signature			
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		Position	Consultant	Project Manager	Technical Director

INTERNAL DOCUMENT - DO NOT SUBMIT TO LOCAL AUTHORITY

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KR Associates...

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1. Executive Summary....

1.1. Instruction

KR Associates (UK) Ltd have been instructed by AB Group Ltd to undertake an environmental noise survey at the Barnham Co-Op located at 3-6 The Square, Barnham, West Sussex to determine if the installation of the proposed plant will have a significant adverse impact in terms of noise on the local noise sensitive properties. This report provides the outline criterion for the proposed new plant.

1.2. Executive Summary (Repeated at Section 7)

1.2.1 Assessment Position

The residential property on Barnham Road is located between 20 m and 22 m from the existing plant within the rear service yard.

1.2.2 Background Noise Measurements

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
L _{Amax,1h}	L _{Aeq,1h}	L _{A90,1h}	L _{Amax,1h}	L _{Aeq,1h}	L _{A90,1h}	L _{Amax,15m}	L _{Aeq,15m}	L _{A90,15m}
52 - 82 dB	46 - 63 dB	42 - 52 dB	48 - 72 dB	43 - 54 dB	43 - 46 dB	38 - 75 dB	31 - 54 dB	28 - 43 dB

1.2.3 Mitigation Measures

No specific mitigation should be required

1.2.4 Proposed Plant Noise Emissions

It would be recommended that the proposed plant does not exceed the following noise levels.

Sound Pressure Level at 10m – 13487: 2003		
Day Time (07:00 – 19:00)	Evening (19:00 – 23:00)	Night Time (23:00 – 07:00)
L _{p(10)} 43 dB	L _{p(10)} 43 dB	L _{p(10)} 29 dB

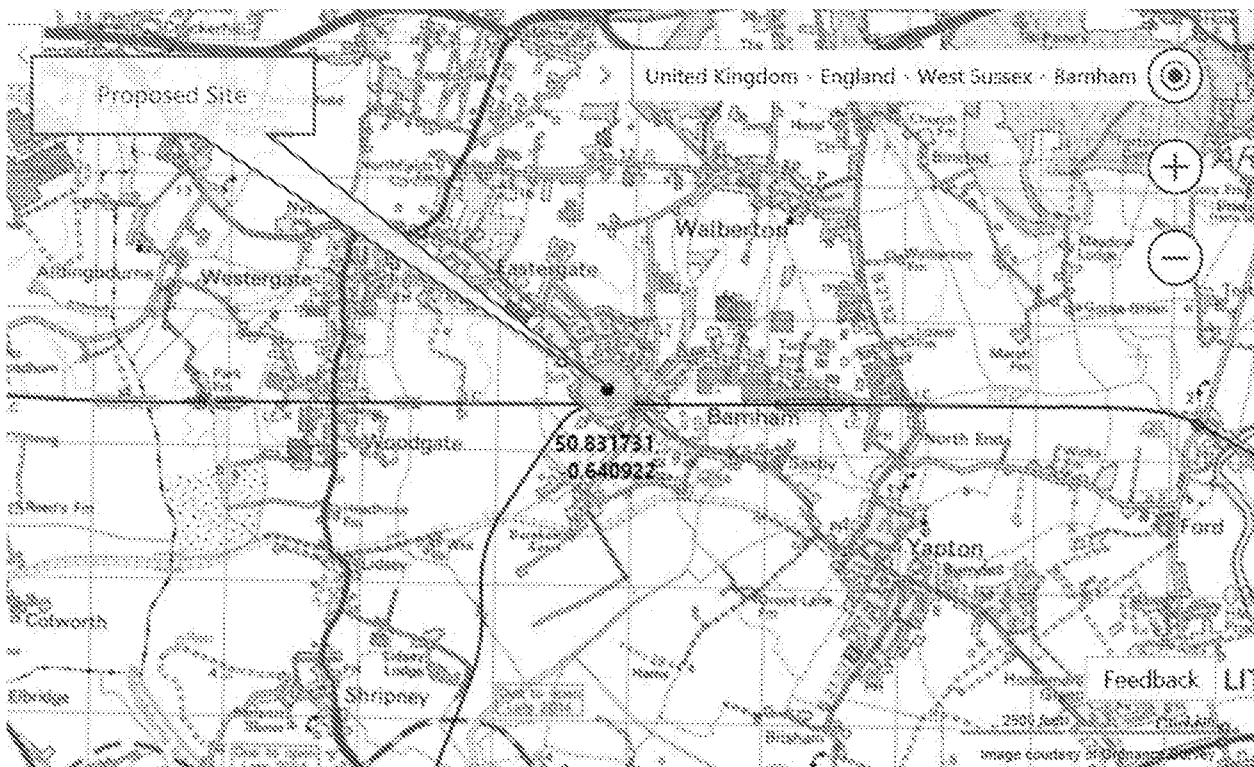
1.2.5 Assessment of Noise Levels

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
L _{Aeq,1h}	L _{A90,1h}	BS4142	L _{Aeq,1h}	L _{A90,1h}	BS4142	L _{Aeq,1h}	L _{A90,1h}	BS4142
38 dB	43 dB	-5 dB	38 dB	43 dB	-5 dB	24 dB	31 dB	-7 dB

The above assessment includes all the existing plant and the proposed plant. West Sussex County Council require a - 0dB minimum

2. Site Location...

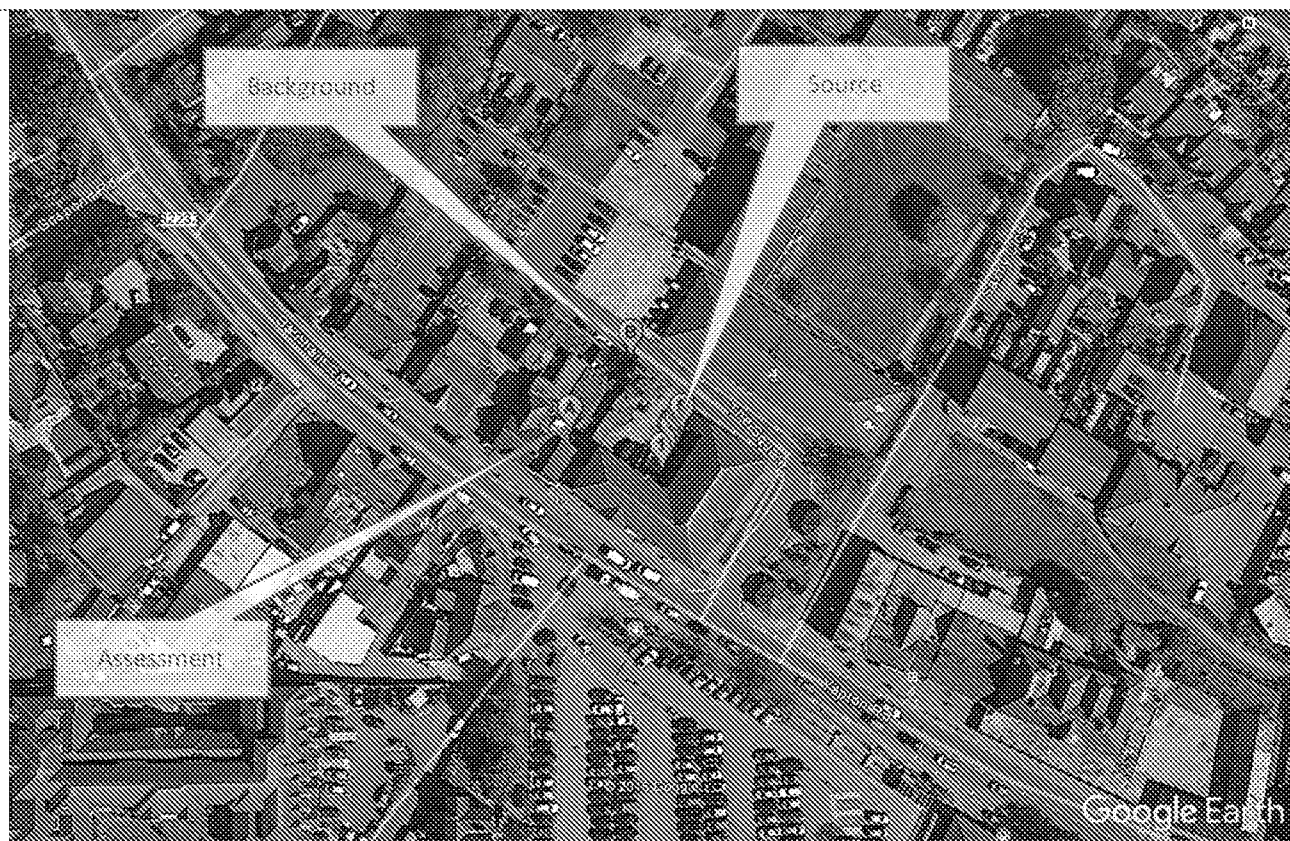
2.1. General Location of Site



Site Plan (Imagery © Google 2016)

The site is located on the corner of Barnham Road and The Square. The plant is located to the rear of the store within a dedicated area within the service yard

2.2. Key Positions (Source, Assessment & Background)



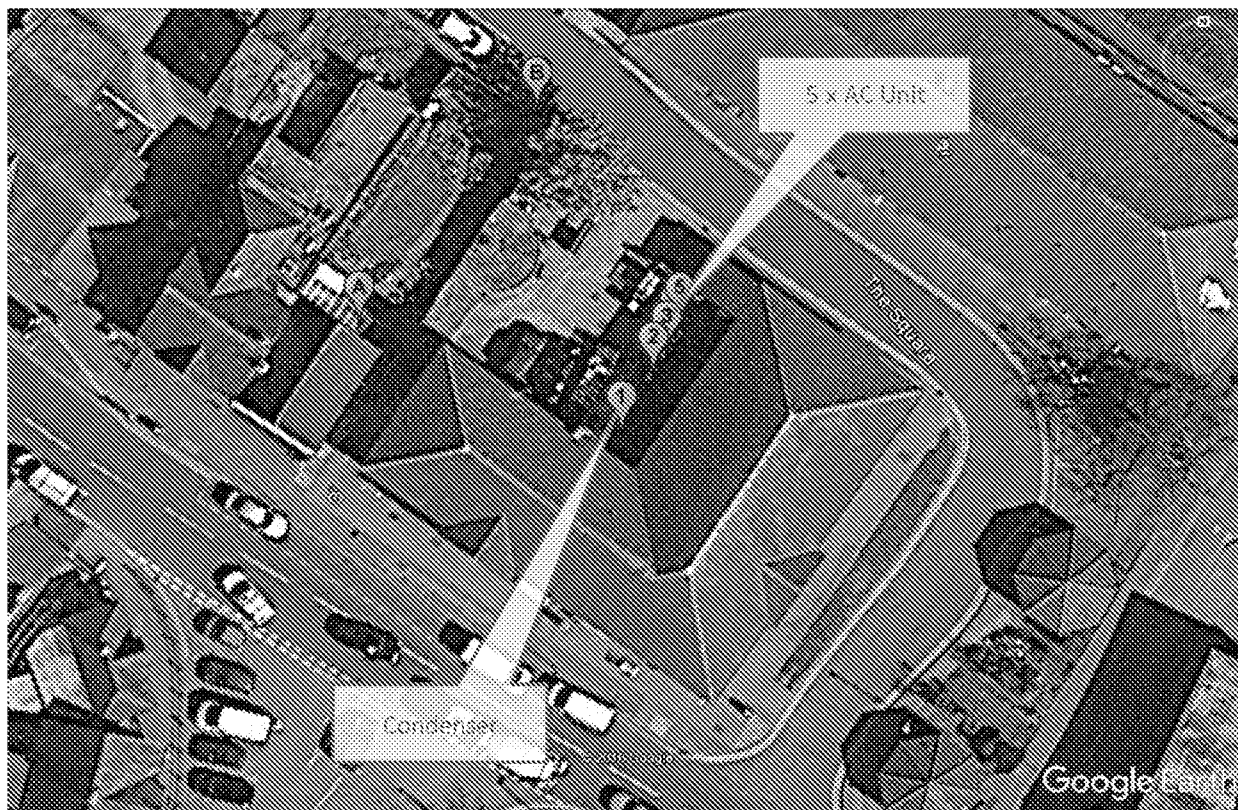
Position	Description	Latitude	Longitude	Elevation
Source	Plant within rear service yard	50.831834 ⁰	-0.640928 ⁰	1 m
Assessment	Residential property on Barnham Road	50.831899 ⁰	-0.641185 ⁰	4 m
Background	lamp post to the rear of the site	50.832034 ⁰	-0.641016 ⁰	3 m

Site Plan (Imagery © Google 2016)

2.3. Free Field Source Sound Pressure Levels at 10m

Source	Description of Source	Sound Pressure Level at 10m – 13487- 2003		
		07:00 – 19:00	19:00 – 23:00	23:00 – 07:00
Source 1	Condenser	L _{p(10)} 36 dB	L _{p(10)} 36 dB	L _{p(10)} 30 dB
Source 2	2 x Mitsubishi AC Units	L _{p(10)} 34 dB	L _{p(10)} 34 dB	Not Operating
Source 3	Mitsubishi AC Unit	L _{p(10)} 34 dB	L _{p(10)} 34 dB	
Source 4	Mitsubishi AC Unit	L _{p(10)} 34 dB	L _{p(10)} 34 dB	
Source 5	Toshiba AC Unit	L _{p(10)} 46 dB	L _{p(10)} 46 dB	
Combined Sound Pressure Level at 10m (1 Reflective Surface)		L _{p(10)} 47 dB	L _{p(10)} 47 dB	L _{p(10)} 30 dB

2.4. Locations and Distances of Individual Source Positions

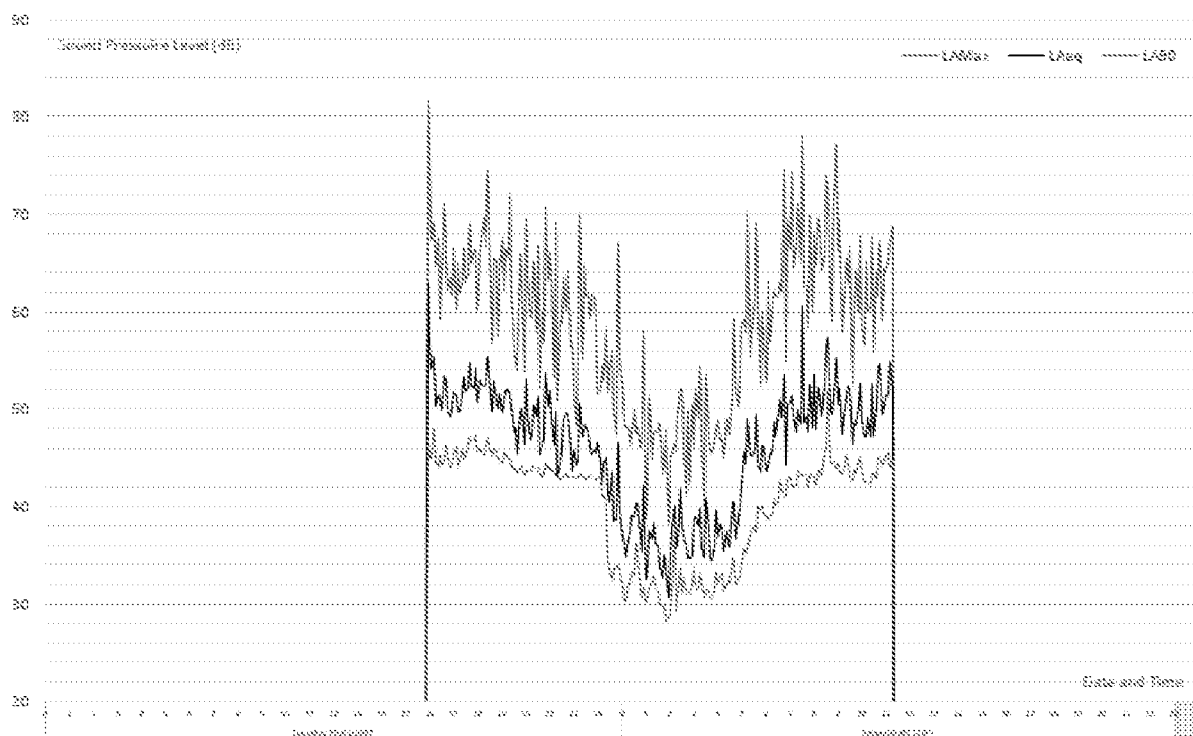


Position	Relative Distance	Latitude	Longitude	Elevation
Source 1	20 m to assessment position	50.831834°	-0.640928°	1 m
Source 2	21 m to assessment position	50.831871°	-0.640898°	1 m
Source 3	21 m to assessment position	50.831884°	-0.640885°	1 m
Source 4	22 m to assessment position	50.831895°	-0.640877°	1 m
Source 5	22 m to assessment position	50.831902°	-0.640872°	1 m

Site Plan (Imagery © Google 2016)

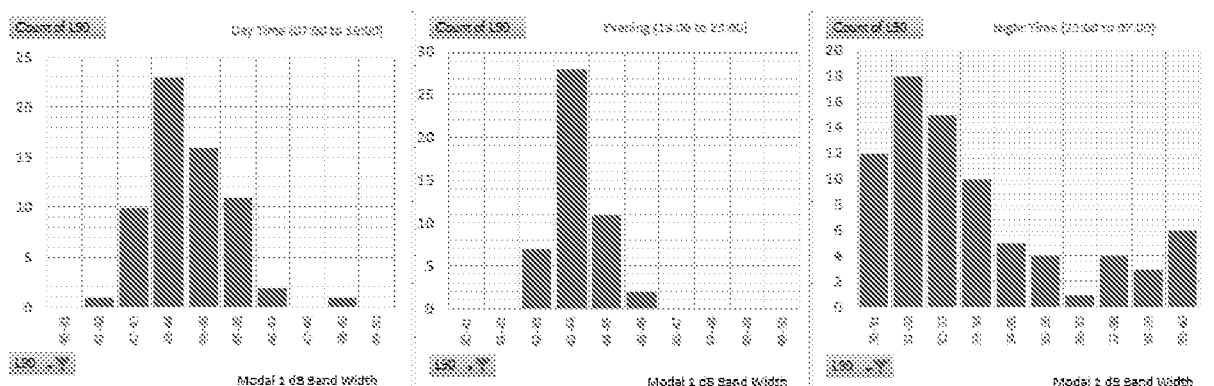
3. Background Noise Measurements...

3.1. 24-hour Background Measurements



Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
LAmax,1h	LAeq,1h	LA90,1h	LAmax,1h	LAeq,1h	LA90,1h	LAmax,15m	LAeq,15m	LA90,15m
52 - 82 dB	46 - 63 dB	42 - 52 dB	48 - 72 dB	43 - 54 dB	43 - 46 dB	38 - 75 dB	31 - 54 dB	28 - 43 dB

3.2. Modal Analysis of Background Data



Day Time (07:00 to 19:00)		Evening (19:00 to 23:00)		Night Time (23:00 to 07:00)	
Standard Deviation (σ)	1.58	Standard Deviation (σ)	0.68	Standard Deviation (σ)	3.92
Geometric Average	45 dB	Geometric Average	44 dB	Geometric Average	34 dB
Modal Value	43 dB	Modal Value	43 dB	Modal Value	31 dB

4. Calculation of Plant Noise Levels...

4.1. Day Time (07:00 to 19:00)

		Source	ISO 9613 - Part 2: 1996 Corrections					Assessment
Ref	Description	L _w	D _c	A _{div}	A _{gr}	A _{atm}	A _{hor}	L _p
1	Condenser	64 dB	+3 dB	-37 dB	+3 dB	-0 dB	-5 dB	28 dB
2	2 x Mitsubishi AC Units	62 dB	+3 dB	-37 dB	+3 dB	-0 dB	-5 dB	26 dB
3	Mitsubishi AC Unit	62 dB	+3 dB	-38 dB	+3 dB	-0 dB	-5 dB	25 dB
4	Mitsubishi AC Unit	62 dB	+3 dB	-38 dB	+3 dB	-0 dB	-5 dB	25 dB
5	Toshiba AC Unit	74 dB	+3 dB	-38 dB	+3 dB	-0 dB	-5 dB	37 dB
TOT	Total Noise Levels	75 dB	-37 dB					38 dB

4.2. Evening (19:00 to 23:00)

		Source	ISO 9613 - Part 2: 1996 Corrections					Assessment
Ref	Description	L _w	D _c	A _{div}	A _{gr}	A _{atm}	A _{hor}	L _p
1	Condenser	64 dB	+3 dB	-37 dB	+3 dB	-0 dB	-5 dB	28 dB
2	2 x Mitsubishi AC Units	62 dB	+3 dB	-37 dB	+3 dB	-0 dB	-5 dB	26 dB
3	Mitsubishi AC Unit	62 dB	+3 dB	-38 dB	+3 dB	-0 dB	-5 dB	25 dB
4	Mitsubishi AC Unit	62 dB	+3 dB	-38 dB	+3 dB	-0 dB	-5 dB	25 dB
5	Toshiba AC Unit	74 dB	+3 dB	-38 dB	+3 dB	-0 dB	-5 dB	37 dB
TOT	Total Noise Levels	75 dB	-37 dB					38 dB

4.3. Night Time (23:00 to 07:00)

		Source	ISO 9613 - Part 2: 1996 Corrections					Assessment
Ref	Description	L _w	D _c	A _{div}	A _{gr}	A _{atm}	A _{hor}	L _p
1	Condenser	58 dB	+3 dB	-37 dB	+3 dB	-0 dB	-5 dB	22 dB
TOT	Total Noise Levels	58 dB	-36 dB					22 dB

5. Assessment of Noise Levels...

5.1. Night Noise Guidelines

Night Noise Guidelines	Day Time - 07:00 to 19:00	Evening -- 19:00 to 23:00	Night Time -- 23:00 to 07:00
Specific Sound	L _{Aeq,1 hour} 38 dB	L _{Aeq,1 hours} 38 dB	L _{Aeq,15 minutes} 22 dB
NPPF -- Improve Quality of Life	Less than L _{Aeq,1 hour} 40 dB	Less than L _{Aeq,1 hour} 40 dB	Less than L _{Aeq,1 hour} 40 dB
NPPF -- Paragraph 123	Complies	Complies	Complies

5.1.1 ISO 1996 Part 1: 2016

ISO 1996 -- Part 1: 2016	Day Time - 07:00 to 19:00	Evening -- 19:00 to 23:00	Night Time -- 23:00 to 07:00
Specific Sound	L _{Aeq,1 hour} 38 dB	L _{Aeq,1 hours} 38 dB	L _{Aeq,15 minutes} 22 dB
Adjustment - Regular Impulsive	+0 dB	+0 dB	+3 dB
Adjustment -- Tonal	+0 dB	+ 0 dB	+ 5 dB
Adjustment -- Time Period	+0 dB (Day Time)	+5 dB (Evening)	+10 dB (Night Time)
Rating Levels	L _{Aeq,1 hour} 38 dB	L _{Aeq,1 hours} 38 dB	L _{Aeq,15 minutes} 30 dB
Residual Sound Levels	L _{Aeq,1 hour} 51 dB	L _{Aeq,1 hours} 48 dB	L _{Aeq,15 minutes} 40 dB
Rating + Residual	L _{Aeq,1 hour} 51.2 dB	L _{Aeq,1 hours} 48.4 dB	L _{Aeq,15 minutes} 40.4 dB
Increase in Residual Noise	+ 0.2 dB	+ 0.4 dB	+ 0.4 dB
IEMA Significance	+2 dB (No Impact)	2 dB (No Impact)	2 dB (No Impact)
NPPF -- Paragraph 123	Complies	Complies	Complies

5.1.2 Assessment of Average Noise Levels (BS 4142: 2014)

BS 4142: 2014	Day Time - 07:00 to 19:00	Evening -- 19:00 to 23:00	Night Time -- 23:00 to 07:00
Residual Noise Levels	L _{Aeq,1 hours} 51 dB	L _{Aeq,1 hours} 48 dB	L _{Aeq,15 minutes} 40 dB
Specific Noise Levels	L _{Aeq,1 hours} 38 dB	L _{Aeq,1 hours} 38 dB	L _{Aeq, 15 minutes} 22 dB
Impulsivity Feature	+0 dB	+0 dB	+2 dB
Tonality Feature	+0 dB	+0 dB	+0 dB
Rating Noise Levels	L _{Aeq,1 hours} 38 dB	L _{Aeq,1 hours} 38 dB	L _{Aeq, 15 minutes} 24 dB
Background Noise Levels	L _{A90,1 hours} 43 dB	L _{A90,1 hours} 43 dB	L _{A90, 15 minutes} 31 dB
BS 4142 Assessment	-5 dB	-5 dB (Low Impact)	-7 dB (Low Impact)
NPPF -- Paragraph 123	-0 dB (Low Impact)	-0 dB (Low Impact)	-0 dB (Low Impact)
Uncertainty (95% Confidence, k=2)	+ 1.76 dB	+ 1.67 dB	+ 1.99 dB

*** END OF REPORT (1" and last page not numbered) ***



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