Acoustic Assessment of Proposed New Mechanical Services Equipment

58A Birkenhead Street, London

Client: West London Mission

Report Reference: 240614-R001C

Date: 8th December 2024

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0. SUMMARY

0.1. ACA Acoustics Limited has been commissioned to assess the acoustic impact of proposed new mechanical services equipment to be installed at 58A Birkenhead Street, London.

0.2. The assessment is required to provide evidence that noise emissions from the equipment will not be detrimental to the amenity of nearby noise-sensitive properties and complies with the Local Authority's requirements.

0.3. A survey has been carried out in the vicinity to establish existing background sound levels. The background sound levels during the most sensitive time of the proposed operating hours are LA90 45dB at the monitoring position during nighttime hours and LA90 52dB during the daytime. Based on the London Borough of Camden Council's criteria, noise from the new plant should not exceed a cumulative level of 35dBA and 42dBA outside the closest noise-sensitive windows at night- and day-time respectively.

0.4. The most noise-sensitive residential receptors (NSRs) have been assessed as the rear, top floor windows of 7 Crestfield Street (NSR1) and the rear, top floor windows of 59 Birkenhead Street (NSR2).

0.5. Calculations using manufacturers' sound level data for the new equipment, allowing for the recommendations as set out in this report, confirm that the sound level from the new equipment at the most impacted receptor is LAeq 39dB and LAeq 35dB at daytime and nighttime respectively.

0.6. Noise from the proposed equipment will not be disturbing or detrimental to the amenity of any nearby residential or other noise-sensitive receptors and complies with the planning requirements of the London Borough of Camden Council.

1. INTRODUCTION

New mechanical services equipment, associated with a residential development, is to be installed at 58A Birkenhead Street, London.

ACA Acoustics Limited has been commissioned by West London Mission to carry out an assessment of noise emissions from the proposed mechanical plant and, where necessary, to make recommendations for a mitigation scheme to ensure that the amenity of nearby noise-sensitive properties is not compromised.

This report presents results of the sound level survey, computer modelling, and assessment.

2. ACOUSTIC CRITERIA

London Borough of Camden Council's policies relating to noise are set out in Appendix 3 of the Local Plan, which provides detailed noise thresholds to determine the potential acoustic impact of new developments.

In Summary, London Borough of Camden requires an assessment to be carried out in accordance with British Standard 4142:2014+A1:2019.

The scope of BS 4142:2014+A1:2019 advises that "*this British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature … to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident*". BS 4142:2014+A1:2019 is commonly used to assess the potential for loss of amenity due to noise from mechanical services equipment and is considered appropriate for this application.

The assessment method of BS 4142:2014+A1:2019 corrects the specific sound level from the source under investigation to account for characteristics that could make the sound more intrusive to obtain a rating level. This rating level is compared against the prevailing background sound level outside the noise-sensitive property. Section 11 of BS 4142:2014+A1:2019 provides a commentary of the assessment result and advises that:

a) *Typically, the greater this difference* [between the rating level and the background sound level]*, the greater the magnitude of the impact.*
b) *A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
c) *A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.*

d) *The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.*

Rather than use the assessment of the impacts from the Standard, Camden requires that the calculated rating level is compared against noise-related conditions set out in Table C of the Appendix, as shown in Table 1 below:

Existing Noise Sensitive Receptor	**Assessment Location**	**Design Period**	**LOAEL (Green)**	**LOAEL to SOAEL (Amber)**	**SOAEL (Red)**
Dwellings	Garden used for main amenity (free field) and outside living or dining or bedroom window (façade)	Day	Rating level 10dB below background	Rating level between 9dB below and 5dB above background	Rating level greater than 5dB above background
Dwellings	Outside bedroom window (façade)	Night	Rating level 10dB below background and no events exceeding 57dB LAmax	Rating level between 9dB below and 5dB above background or noise events between 57dB and 88dB LAmax	Rating level greater than 5dB above background and/or events exceeding 88dB LAmax

Table 1: London Borough of Camden Noise Limits

The terms "LOAEL" and "SOAEL" are defined as the "Lowest Observed Adverse Effect Level" and "Significant Observed Adverse Effect Level" in the Planning Practice Guidance – Noise (PPG-N) and Noise Policy Statement for England (NPSE). The NPSE and PPG-N both require that significant adverse impacts are avoided and that where the impact lies somewhere between the LOAEL and SOAEL all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life, whilst considering the guiding principles of sustainable development as set out in the National Planning Policy Framework.

Assessment result criteria shown within Appendix 1 of Camden's Local Plan are more stringent than those set out in the British Standard and can therefore be taken to ensure a robust assessment. Compliance with the "Green" criteria of 10dB below background levels will ensure no loss of amenity to nearby residents.

3. REVIEW OF SITE LOCATION

New mechanical equipment, comprising of 2 air handling units (AHUs) and 8 condenser units, is being installed on the roof of the site.

The most noise-sensitive residential receptors (NSRs) have been assessed as the rear, top floor windows of 7 Crestfield Street (NSR1) and the rear, top floor windows of 59 Birkenhead Street (NSR2), indicated by the NSR labels below.

A marked-up aerial image is included in Figure 1, identifying the location of the proposed equipment and sound level survey measurement position.

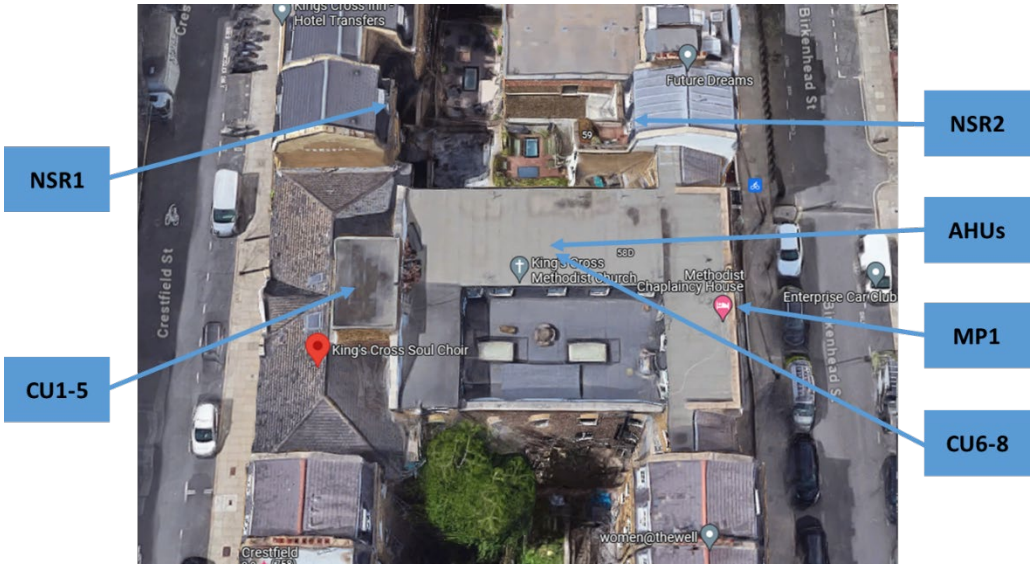


Figure 1: Equipment location, measurement position, and closest receptor (available at google.com/maps)

Proposed operating times of the equipment are understood to be potentially 24 hours a day, although CU7 and CU8 will only be operating between the hours of 8am and 9pm.

4. SOUND LEVEL SURVEY

To assess sound levels from the new mechanical equipment, it is necessary to establish representative background sound levels in the vicinity during the proposed plant operating times.

The background sound level was measured via an unattended survey at the position indicated in Figure 1. This position was considered as being representative of the NSR1 receptor. The survey was set up by Alfie Morgan of ACA Acoustics and conducted between the 3rd and 8th July 2024.

The microphone was positioned at the front façade of the building, overlooking Birkenhead Street. The soundscape here is considered similar to the façade facing Crestfield Street but ongoing building works meant that a second survey position here was not feasible.

During the survey, the soundscape in the vicinity was influenced predominantly by local road traffic noise.

The following equipment was used during the survey. An on-site calibration check was conducted on the sound level meter prior to the survey and repeated after with no deviation noted.

Equipment	**Serial Number**
Svantek Class 1 sound level meter type SVAN 971 with weatherproof outdoor environmental kit	84045
Svantek calibrator type SV33B. Compliant to IEC 60942-1:2003	83826

Table 2: Equipment used for the sound level survey

The extended nature of the survey ensures that a reasonable sample of results have been recorded with appropriate weather conditions. Meteorological conditions are not considered to have adversely impacted the survey results.

Results of the survey are shown in graphical form in Figure 2 below.

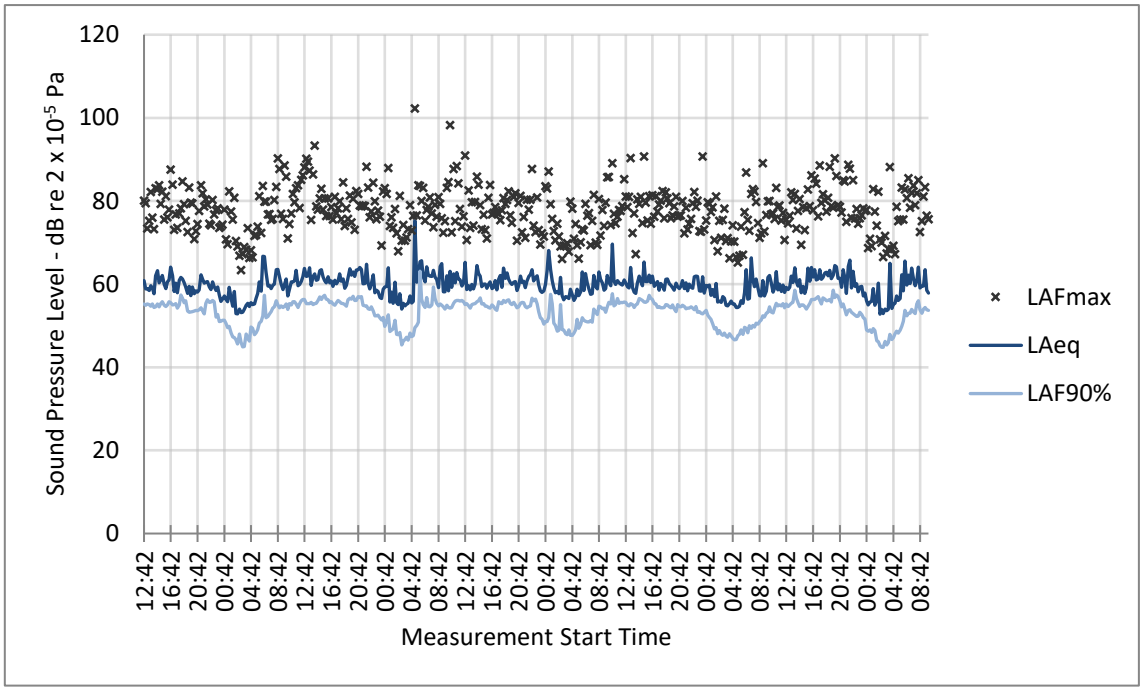


Figure 2: Sound level survey results – 3rd to 8th July 2024

In accordance with the methodology set out in BS 4142:2014+A1:2019, the background sound level is not necessarily the lowest recorded value. Instead, the background sound level should be a level which is representative of the underlying soundscape at the receptor location.

A statistical analysis of the measured LA90 results during the daytime proposed operating times of the equipment as well as the nighttime is shown in Figure 3 and 4 below, following guidance set out in the Standard.

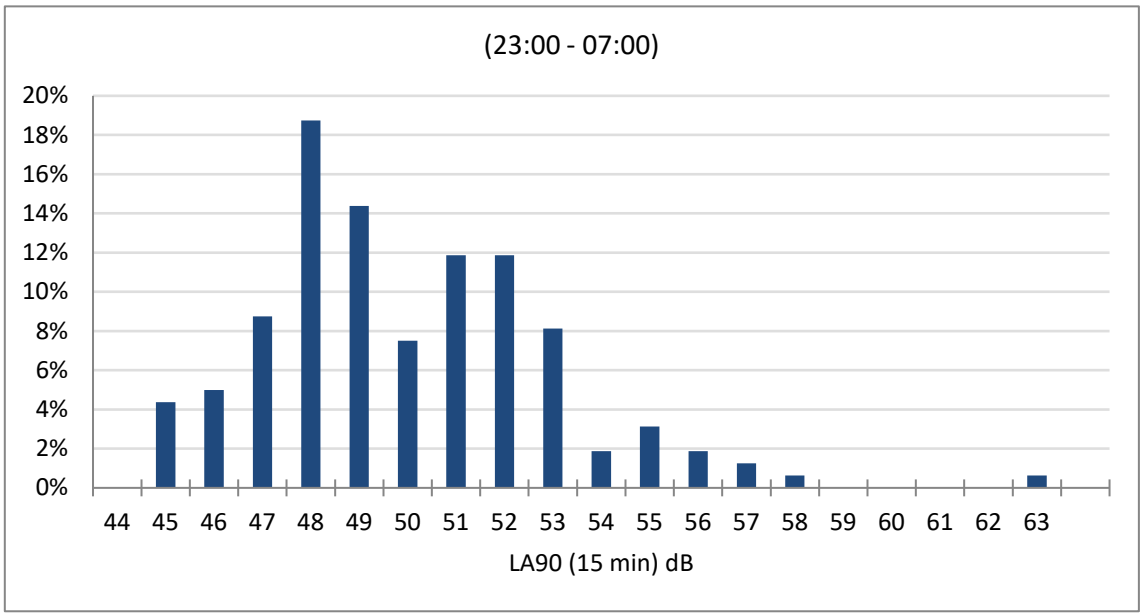


Figure 3: Statistical analysis of measured LA90 sound levels during the nighttime

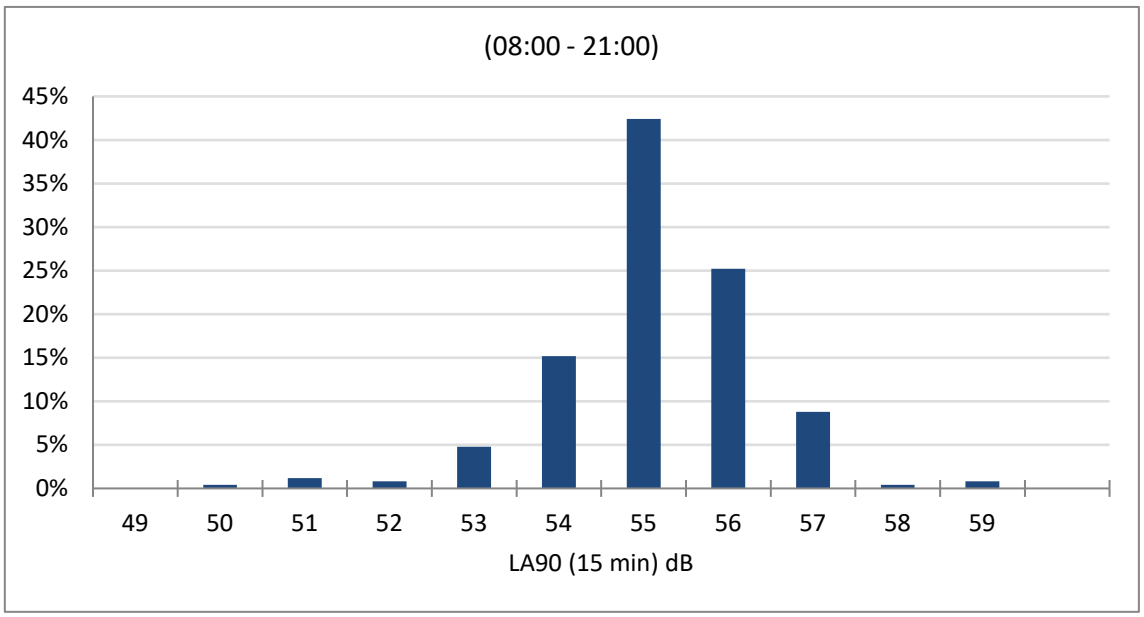


Figure 4: Statistical analysis of measured LA90 sound levels during the daytime

The raw data displayed above has been corrected for reflections from the façade, as per the guidance in the Standard, with a penalty of 3dB.

Based on the statistical analysis of the survey results, the author considers a level of LA90 45dB is representative of the nighttime background sound level in the vicinity and LA90 52dB is representative of the daytime background sound level in the vicinity.

Summary results of the survey are provided in Table 3 below.

Receptor	Period	Background Sound Level During Operating Period - LA90
NSR1&2	23:00-07:00	45dB
NSR1&2	08:00-21:00	52dB

Table 3: Summary sound level survey results

5. ACOUSTIC ASSESSMENT

The development includes the installation of new air handling units and condensers. Confirmation of the equipment models used in the assessment is provided in Table 4 below.

Description	Equipment Model	Airflow (m3/s)	Sound Level (LwA)	Quantity
AHU1 Intake	AHU1 data as provided by client	1.5	53dB	1
AHU1 Exhaust	AHU1 data as provided by client	1.5	67dB	1
AHU1 Breakout	AHU1 data as provided by client	1.5	60dB	1
AHU2 Intake	AHU2 data as provided by client	1.5	52dB	1
AHU2 Exhaust	AHU2 data as provided by client	1.5	62dB	1
AHU2 Breakout	AHU2 data as provided by client	1.5	57dB	1
CU1-2	EBLA14D3V3	N/A	62dB	2
CU3-5	EBLA16D3V3	N/A	62dB	3
CU6-8	PURY-EM500YNW-A1	N/A	84dB	3

Table 4: Proposed new mechanical equipment used in the assessment

A computer model has been used to calculate the noise contribution from the proposed plant to outside nearest noise-sensitive windows, using manufacturer's published sound data for the proposed new plant. Ductwork system losses have been calculated in accordance with CIBSE Guide B4 *Noise and vibration control for HVAC*. Environmental corrections have been calculated in accordance with ISO 9613-2.

The assessment has been undertaken using drawing reference 311778-HAH-ZZ-RF-SK-M-05001, as provided by the client.

Mitigation recommendations outlined in Section 6 of this report are included in the computer model.

The cumulative calculated specific sound level to outside the most sensitive receptors with all equipment operating is shown in Table 5 below. Summary printouts from the calculation models are included in Appendix A.

Receptor Location	**Calculated Equipment Sound Level (All plant operating)**
NSR1 Day	39dBA
NSR1 Night	35dBA
NSR2 Day	38dBA
NSR2 Night	34dBA

Table 5: Calculated cumulative equipment sound levels at 1m outside noise-sensitive windows

Assessment of the calculated rating levels at the most impacted assessment, in accordance with BS 4142:2014+A1:2019, is provided in Table 6 below.

Description	NSR1 Day Receptor (All Plant)	NSR1 Night Receptor (All Plant)	Relevant Clause	Commentary
Calculated specific sound level to receptor	LAeq 39dB	LAeq 35dB	7.1 7.3.6	New equipment operating. Refer to calculation sheets in Appendix A.
Background sound level	LA90 52dB	LA90 45dB	8.1.3 8.3	Measured representative background sound level.
Acoustic feature correction	0dB	0dB	9.2	The calculated specific sound levels do not indicate any distinctive component and the equipment will be significantly below the background and residual sound levels.
Rating level	LAr 39dB	LAr 35dB	9.2	
Excess of rating level over background sound level	-13dB	-10dB	11	Assessment indicates negligible likelihood of adverse impact

Table 6: Assessment of results in accordance with BS 4142:2014+A1:2019

Table 6 shows the rating level of the proposed new equipment will be at least 10dB below the background LA90 sound level to outside the closest noise-sensitive properties.

BS 4142:2014+A1:2019 requires an assessment to consider the context of the development in addition to adhering to numerical values. Considering the calculated numerical value of the specific sound, allowing a reduction through partially open windows of 15dBA, as recommended in BS 8233:2014, nighttime sound levels inside the neighbouring dwellings due to the proposed new equipment will be approximately 20dBA (35dBA – 15dBA). This is significantly below guideline levels for sleeping in bedrooms of LAeq 30dB, set out in BS 8233:2014 and is further confirmation that sound levels from the new mechanical equipment should not be detrimental to the amenity of any noise-sensitive receptors in the vicinity.

The author considers that the context of the assessment does not alter the initial estimate of the impact, and that sound levels from the new mechanical equipment should not be detrimental to the amenity of any residential occupiers in the vicinity.

6. ACOUSTIC MITIGATION TREATMENTS

As discussed in Section 5, noise control treatments have been included in the calculation model. Acoustic specification for the mitigation scheme is provided below.

6.1. High Performance Acoustic Enclosure

It is recommended that the CU6-8 condensers are installed in a high-performance acoustic enclosure. Acoustic performance of a suitable enclosure is shown in Appendix B.

6.2. Louvred Enclosure

It is advised that an acoustic louvre is applied surrounding the CU1-5 condensing units. A single louvre may be installed over all the condensers, with no gaps at the edges. A suitable louvred enclosure would typically be formed from 150mm deep acoustic louvres such as Allaway Acoustic's AL1515 model or equivalent. Minimum insertion loss performance for the louvres is shown on the schedule in Appendix B.

Structural supports/steelwork and access panels or doors may be required and should be determined by the successful supplier accordingly.

6.3. Acoustic Screen

An acoustic barrier is proposed around the plant area containing the AHUs and CU6-8 condensers to provide acoustic screening from properties with line of sight. The screen should be not less than 2 meters high, equal to the highest point of the equipment. The screen must also extend down to the ground with no gaps, and should be designed such that sound transmission through the screen is at least 10dB lower than levels over the top of the screen. In addition the screen should be no more than 1m from the equipment horizontally.

6.4. Vibration Isolators

To control the potential for structure-borne noise and vibration from the mechanical equipment affecting adjoining residential and commercial occupants, it is recommended that the plant is installed on vibration isolators.

Vibration isolators for the fans would typically be steel spring type mounts. The isolator supplier would be able to select a suitable model to provide minimum 98% isolation efficiency at the working load and operating speed. Flexible connections should be fitted between the fans and adjoining ductwork both sides. Suitable vibration isolators for the condensers are typically rubber or neoprene turret type mounts or pads, providing minimum 8mm deflection at the working load. The isolator supplier should ensure their selection is suitable allowing for the condenser operating speed, point load, and installation location.

7. CONCLUSION

A planning application is to be submitted for the installation of new mechanical plant and equipment at 58A Birkenhead Street, London.

ACA Acoustics have undertaken an assessment of noise from the proposed equipment using manufacturers' published acoustic data. Calculated rating sound levels for the plant are at least 10dB below the background sound level during proposed operating times of the equipment when assessed at 1m from the closest noise-sensitive windows of residential receptors.

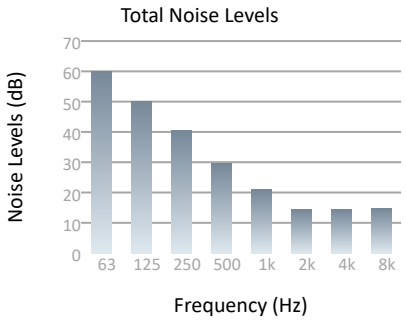
The author considers that, allowing for the proposed mitigation scheme in this report, the proposed equipment achieve the Local Authority's planning requirements for this development and will not be detrimental to the amenity of nearby noise-sensitive occupants.

Appendix A

Acoustic Calculations

King's Cross Methodist Church

Project Name	King's Cross Methodist Church
Project Reference	240614
Reference	NSR1 Day
Description	Rear top floor windows of 7 Crestfield St
Noise Limit	42
Calculated Cumulative dBA	38.5



Calculated Lp at Receptor

Reference	Qty	Noise Levels (dB)								dBA
		63	125	250	500	1k	2k	4k	8k	
AHU1 Intake	1	23.9	22.9	19.2	10.2	6.4	2.9	-0.1	-5.7	
AHU1 Exhaust	1	29.8	24.5	22.7	19.9	11.0	9.5	13.3	14.6	
AHU1 Breakout	1	35.1	25.8	16.9	18.6	1.0	-2.9	-8.4	-6.1	
CU1-2	2	28.6	29.5	28.0	20.1	12.1	3.0	-2.3	-8.4	
CU3-5	3	28.6	29.5	28.0	20.1	12.1	3.0	-2.3	-8.4	
CU6-8	3	55.3	44.9	33.9	17.9	8.7	2.3	-2.6	-11.6	
AHU2 Intake	1	20.5	19.2	8.5	-3.1	-18.8	-21.0	-24.3	-28.0	
AHU2 Exhaust	1	28.5	26.2	19.5	8.7	-1.1	-0.7	-1.4	-4.7	
AHU2 Breakout	1	31.2	22.9	9.1	8.8	-4.8	-9.7	-17.6	-19.0	

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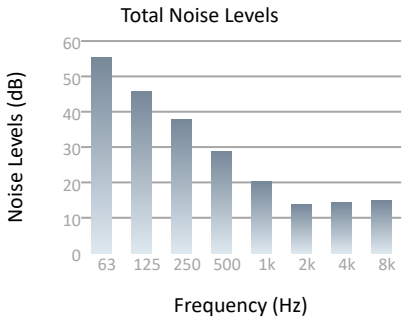
King's Cross Methodist Church

Project Name	King's Cross Methodist Church
Project Reference	240614
Reference	NSR1 Night
Description	Rear top floor windows of 7 Crestfield St
Noise Limit	35
Calculated Cumulative dBA	35



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AHU1 Exhaust	1	29.8	24.5	22.7	19.9	11.0	9.5	13.3	14.6	
AHU1 Breakout	1	35.1	25.8	16.9	18.6	1.0	-2.9	-8.4	-6.1	
CU1-2	2	28.6	29.5	28.0	20.1	12.1	3.0	-2.3	-8.4	
CU3-5	3	28.6	29.5	28.0	20.1	12.1	3.0	-2.3	-8.4	
AHU2 Breakout	1	31.2	22.9	9.1	8.8	-4.8	-9.7	-17.6	-19.0	
AHU2 Exhaust	1	28.5	26.2	19.5	8.7	-1.1	-0.7	-1.4	-4.7	
AHU2 Intake	1	20.5	19.2	8.5	-3.1	-18.8	-21.0	-24.3	-28.0	
CU6-8	1	55.3	44.9	33.9	17.9	8.7	2.3	-2.6	-11.6	

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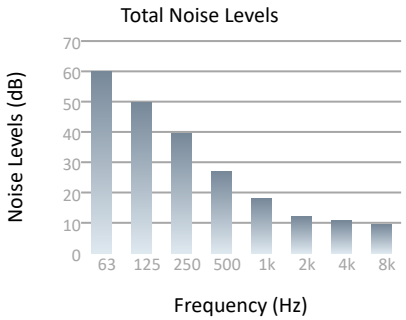
King's Cross Methodist Church

Project Name	King's Cross Methodist Church
Project Reference	240614
Reference	NSR2 Day
Description	Rear top floor windows of 59 Birkenhead St
Noise Limit	42
Calculated Cumulative dBA	38.1



Calculated Lp at Receptor

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AHU1 Exhaust	1	24.5	19.2	17.5	14.7	5.8	4.3	7.6	8.3	
AHU1 Breakout	1	30.2	20.9	12.1	13.8	-3.8	-7.7	-13.6	-12.0	
CU1-2	2	24.9	25.6	24.3	16.4	8.4	-0.8	-6.2	-12.9	
CU6-8	3	55.3	44.9	33.9	17.9	8.7	2.3	-2.6	-11.6	
CU3-5	3	24.9	25.6	24.3	16.4	8.4	-0.8	-6.2	-12.9	
AHU2 Intake	1	25.8	24.5	13.7	2.1	-13.6	-15.8	-18.6	-21.7	
AHU2 Exhaust	1	33.8	31.5	24.7	13.9	4.0	4.5	4.3	1.6	
AHU2 Breakout	1	36.1	27.8	13.9	13.6	0.0	-4.9	-12.4	-13.1	

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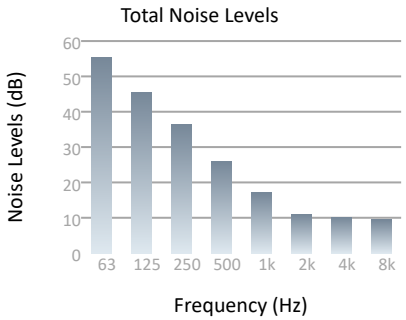
King's Cross Methodist Church

Project Name	King's Cross Methodist Church
Project Reference	240614
Reference	NSR2 Night
Description	Rear top floor windows of 59 Birkenhead St
Noise Limit	35
Calculated Cumulative dBA	34.1



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CU1-2	2	24.9	25.6	24.3	16.4	8.4	-0.8	-6.2	-12.9	
CU3-5	3	24.9	25.6	24.3	16.4	8.4	-0.8	-6.2	-12.9	
CU6-8	1	55.3	44.9	33.9	17.9	8.7	2.3	-2.6	-11.6	
AHU2 Intake	1	25.8	24.5	13.7	2.1	-13.6	-15.8	-18.6	-21.7	
AHU2 Exhaust	1	33.8	31.5	24.7	13.9	4.0	4.5	4.3	1.6	
AHU2 Breakout	1	36.1	27.8	13.9	13.6	0.0	-4.9	-12.4	-13.1	

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Calculation Sheet

AHU1 Intake to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Intake								
Noise Levels	**69.0**	**64.0**	**59.0**	**44.0**	**32.0**	**31.0**	**35.0**	**40.0**
Silencer								
	0.1	*0.4*	*0.4*	*7.3*	*17.4*	*17.4*	*12.6*	*2.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**23.9**	**22.9**	**19.2**	**10.2**	**6.4**	**2.9**	**-0.1**	**-5.7**

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Calculation Sheet

AHU1 Intake to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Intake								
Noise Levels	**69.0**	**64.0**	**59.0**	**44.0**	**32.0**	**31.0**	**35.0**	**40.0**
Silencer								
	0.1	*0.4*	*0.4*	*7.3*	*17.4*	*17.4*	*12.6*	*2.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**18.6**	**17.6**	**13.9**	**5.0**	**1.2**	**-2.2**	**-5.8**	**-12.0**

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Calculation Sheet

AHU1 Exhaust to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Exhaust								
Noise Levels	**75.0**	**66.0**	**63.0**	**61.0**	**54.0**	**55.0**	**61.0**	**63.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**29.8**	**24.5**	**22.7**	**19.9**	**11.0**	**9.5**	**13.3**	**14.6**

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Calculation Sheet

AHU1 Exhaust to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Exhaust								
Noise Levels	**75.0**	**66.0**	**63.0**	**61.0**	**54.0**	**55.0**	**61.0**	**63.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**24.5**	**19.2**	**17.5**	**14.7**	**5.8**	**4.3**	**7.6**	**8.3**

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Calculation Sheet

AHU2 Intake to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Intake								
Noise Levels	**71.0**	**66.0**	**54.0**	**43.0**	**23.0**	**26.0**	**26.0**	**26.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.2*	*6.4*	*3.7*	*3.1*	*0.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**25.8**	**24.5**	**13.7**	**2.1**	**-13.6**	**-15.8**	**-18.6**	**-21.7**

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Calculation Sheet

AHU2 Intake to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Intake								
Noise Levels	**71.0**	**66.0**	**54.0**	**43.0**	**23.0**	**26.0**	**26.0**	**26.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.2*	*6.4*	*3.7*	*3.1*	*0.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**20.5**	**19.2**	**8.5**	**-3.1**	**-18.8**	**-21.0**	**-24.3**	**-28.0**

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Calculation Sheet

AHU2 Exhaust to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Exhaust								
Noise Levels	**79.0**	**73.0**	**65.0**	**55.0**	**47.0**	**50.0**	**52.0**	**50.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**33.8**	**31.5**	**24.7**	**13.9**	**4.0**	**4.5**	**4.3**	**1.6**

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Calculation Sheet

AHU2 Exhaust to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Exhaust								
Noise Levels	**79.0**	**73.0**	**65.0**	**55.0**	**47.0**	**50.0**	**52.0**	**50.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**28.5**	**26.2**	**19.5**	**8.7**	**-1.1**	**-0.7**	**-1.4**	**-4.7**

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Calculation Sheet

AHU1 Intake to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Intake								
Noise Levels	**69.0**	**64.0**	**59.0**	**44.0**	**32.0**	**31.0**	**35.0**	**40.0**
Silencer								
	0.1	*0.4*	*0.4*	*7.3*	*17.4*	*17.4*	*12.6*	*2.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**23.9**	**22.9**	**19.2**	**10.2**	**6.4**	**2.9**	**-0.1**	**-5.7**

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Calculation Sheet

AHU1 Intake to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Intake								
Noise Levels	**69.0**	**64.0**	**59.0**	**44.0**	**32.0**	**31.0**	**35.0**	**40.0**
Silencer								
	0.1	*0.4*	*0.4*	*7.3*	*17.4*	*17.4*	*12.6*	*2.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**18.6**	**17.6**	**13.9**	**5.0**	**1.2**	**-2.2**	**-5.8**	**-12.0**

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Calculation Sheet

AHU1 Exhaust to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Exhaust								
Noise Levels	**75.0**	**66.0**	**63.0**	**61.0**	**54.0**	**55.0**	**61.0**	**63.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**29.8**	**24.5**	**22.7**	**19.9**	**11.0**	**9.5**	**13.3**	**14.6**

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Calculation Sheet

AHU1 Exhaust to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Exhaust								
Noise Levels	**75.0**	**66.0**	**63.0**	**61.0**	**54.0**	**55.0**	**61.0**	**63.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**24.5**	**19.2**	**17.5**	**14.7**	**5.8**	**4.3**	**7.6**	**8.3**

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Calculation Sheet

AHU2 Intake to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Intake								
Noise Levels	**71.0**	**66.0**	**54.0**	**43.0**	**23.0**	**26.0**	**26.0**	**26.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.2*	*6.4*	*3.7*	*3.1*	*0.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**25.8**	**24.5**	**13.7**	**2.1**	**-13.6**	**-15.8**	**-18.6**	**-21.7**

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Calculation Sheet

AHU2 Intake to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Intake								
Noise Levels	**71.0**	**66.0**	**54.0**	**43.0**	**23.0**	**26.0**	**26.0**	**26.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.2*	*6.4*	*3.7*	*3.1*	*0.7*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**20.5**	**19.2**	**8.5**	**-3.1**	**-18.8**	**-21.0**	**-24.3**	**-28.0**

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Calculation Sheet

AHU2 Exhaust to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Exhaust								
Noise Levels	**79.0**	**73.0**	**65.0**	**55.0**	**47.0**	**50.0**	**52.0**	**50.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-29.1	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*	*-29.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-0.9*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.3*	*-11.5*	*-13.9*	*-16.5*	*-19.3*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**33.8**	**31.5**	**24.7**	**13.9**	**4.0**	**4.5**	**4.3**	**1.6**

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Calculation Sheet

AHU2 Exhaust to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Exhaust								
Noise Levels	**79.0**	**73.0**	**65.0**	**55.0**	**47.0**	**50.0**	**52.0**	**50.0**
Silencer								
	0.0	*0.0*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*
End Reflection & Directional Directivity	*-9.3*	*-4.3*	*-1.2*	*0.3*	*1.0*	*1.4*	*1.6*	*1.6*
Dc - Reflections & Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-34.5	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*	*-34.5*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.1*	*-0.5*	*-1.8*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.8*	*-11.2*	*-13.6*	*-16.2*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**28.5**	**26.2**	**19.5**	**8.7**	**-1.1**	**-0.7**	**-1.4**	**-4.7**

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Calculation Sheet

AHU1 Breakout to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Breakout								
Noise Levels	**72.0**	**64.0**	**57.0**	**61.0**	**46.0**	**45.0**	**42.0**	**45.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-30.1	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.1*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.2*	*-11.4*	*-13.8*	*-16.4*	*-19.2*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**35.1**	**25.8**	**16.9**	**18.6**	**1.0**	**-2.9**	**-8.4**	**-6.1**

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Calculation Sheet

AHU1 Breakout to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Breakout								
Noise Levels	**72.0**	**64.0**	**57.0**	**61.0**	**46.0**	**45.0**	**42.0**	**45.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-35.1	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.5*	*-1.9*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.7*	*-11.2*	*-13.6*	*-16.1*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**30.2**	**20.9**	**12.1**	**13.8**	**-3.8**	**-7.7**	**-13.6**	**-12.0**

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Calculation Sheet

AHU2 Breakout to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Breakout								
Noise Levels	**73.0**	**66.0**	**54.0**	**56.0**	**45.0**	**43.0**	**38.0**	**38.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-30.1	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.1*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.2*	*-11.4*	*-13.8*	*-16.4*	*-19.2*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**36.1**	**27.8**	**13.9**	**13.6**	**0.0**	**-4.9**	**-12.4**	**-13.1**

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Calculation Sheet

AHU2 Breakout to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Breakout								
Noise Levels	**73.0**	**66.0**	**54.0**	**56.0**	**45.0**	**43.0**	**38.0**	**38.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-35.1	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.5*	*-1.9*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.7*	*-11.2*	*-13.6*	*-16.1*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**31.2**	**22.9**	**9.1**	**8.8**	**-4.8**	**-9.7**	**-17.6**	**-19.0**

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Calculation Sheet

CU1-2 to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU1-2								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-33.4	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.4*	*-1.5*
Agr - Ground Attenuation								
	3.0	*0.9*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**28.6**	**29.5**	**28.0**	**20.1**	**12.1**	**3.0**	**-2.3**	**-8.4**

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Calculation Sheet

CU3-5 to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU3-5								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-33.4	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.4*	*-1.5*
Agr - Ground Attenuation								
	3.0	*0.9*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**28.6**	**29.5**	**28.0**	**20.1**	**12.1**	**3.0**	**-2.3**	**-8.4**

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Calculation Sheet

CU1-2 to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU1-2								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-37.1	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.7*	*-2.4*
Agr - Ground Attenuation								
	3.0	*0.6*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**24.9**	**25.6**	**24.3**	**16.4**	**8.4**	**-0.8**	**-6.2**	**-12.9**

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Calculation Sheet

CU3-5 to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU3-5								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-37.1	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.7*	*-2.4*
Agr - Ground Attenuation								
	3.0	*0.6*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**24.9**	**25.6**	**24.3**	**16.4**	**8.4**	**-0.8**	**-6.2**	**-12.9**

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Calculation Sheet

CU6-8 to NSR1 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU6-8								
Sound Power Levels	**96.0**	**89.0**	**86.0**	**81.0**	**78.0**	**74.0**	**70.0**	**64.0**
Noise Control Treatments								
Treatment - AE1								
	-4.0	*-6.0*	*-12.0*	*-21.0*	*-27.0*	*-29.0*	*-29.0*	*-30.0*
Dc - Condenser Directivity								
	-0.9	*-2.2*	*-4.2*	*-6.0*	*-6.0*	*-6.0*	*-6.0*	*-6.0*
Adiv - Geometrical Divergance								
	-31.0	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.2*
Agr - Ground Attenuation								
	3.0	*1.0*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-7.8	*-5.8*	*-6.3*	*-6.5*	*-6.7*	*-7.1*	*-7.8*	*-8.9*
External Receiver								
External Receiver - NSR1 Night								
Sound Pressure, Lp:	**55.3**	**44.9**	**33.9**	**17.9**	**8.7**	**2.3**	**-2.6**	**-11.6**

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Calculation Sheet

CU6-8 to NSR2 Night

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU6-8								
Sound Power Levels	**96.0**	**89.0**	**86.0**	**81.0**	**78.0**	**74.0**	**70.0**	**64.0**
Noise Control Treatments								
Treatment - AE1								
	-4.0	*-6.0*	*-12.0*	*-21.0*	*-27.0*	*-29.0*	*-29.0*	*-30.0*
Dc - Condenser Directivity								
	-0.9	*-2.2*	*-4.2*	*-6.0*	*-6.0*	*-6.0*	*-6.0*	*-6.0*
Adiv - Geometrical Divergance								
	-31.0	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.2*
Agr - Ground Attenuation								
	3.0	*1.0*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-7.8	*-5.8*	*-6.3*	*-6.5*	*-6.7*	*-7.1*	*-7.8*	*-8.9*
External Receiver								
External Receiver - NSR2 Night								
Sound Pressure, Lp:	**55.3**	**44.9**	**33.9**	**17.9**	**8.7**	**2.3**	**-2.6**	**-11.6**

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Calculation Sheet

AHU1 Breakout to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Breakout								
Noise Levels	**72.0**	**64.0**	**57.0**	**61.0**	**46.0**	**45.0**	**42.0**	**45.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-30.1	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.1*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.2*	*-11.4*	*-13.8*	*-16.4*	*-19.2*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**35.1**	**25.8**	**16.9**	**18.6**	**1.0**	**-2.9**	**-8.4**	**-6.1**

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Calculation Sheet

AHU1 Breakout to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU1 Breakout								
Noise Levels	**72.0**	**64.0**	**57.0**	**61.0**	**46.0**	**45.0**	**42.0**	**45.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-35.1	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.5*	*-1.9*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.7*	*-11.2*	*-13.6*	*-16.1*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**30.2**	**20.9**	**12.1**	**13.8**	**-3.8**	**-7.7**	**-13.6**	**-12.0**

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Calculation Sheet

AHU2 Breakout to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Breakout								
Noise Levels	**73.0**	**66.0**	**54.0**	**56.0**	**45.0**	**43.0**	**38.0**	**38.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-30.1	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*	*-30.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.1*
Agr - Ground Attenuation								
	3.0	*1.1*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.8	*-9.2*	*-11.4*	*-13.8*	*-16.4*	*-19.2*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**36.1**	**27.8**	**13.9**	**13.6**	**0.0**	**-4.9**	**-12.4**	**-13.1**

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Calculation Sheet

AHU2 Breakout to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - AHU2 Breakout								
Noise Levels	**73.0**	**66.0**	**54.0**	**56.0**	**45.0**	**43.0**	**38.0**	**38.0**
Noise Control Treatments								
Treatment - None								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Dc - Directivity								
DI Index - 0dB								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-35.1	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*	*-35.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.5*	*-1.9*
Agr - Ground Attenuation								
	3.0	*0.8*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-9.7	*-8.7*	*-11.2*	*-13.6*	*-16.1*	*-18.9*	*-21.5*	*-21.5*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**31.2**	**22.9**	**9.1**	**8.8**	**-4.8**	**-9.7**	**-17.6**	**-19.0**

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Calculation Sheet

CU1-2 to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU1-2								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-33.4	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.4*	*-1.5*
Agr - Ground Attenuation								
	3.0	*0.9*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**28.6**	**29.5**	**28.0**	**20.1**	**12.1**	**3.0**	**-2.3**	**-8.4**

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Calculation Sheet

CU3-5 to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU3-5								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-33.4	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*	*-33.4*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.4*	*-1.5*
Agr - Ground Attenuation								
	3.0	*0.9*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**28.6**	**29.5**	**28.0**	**20.1**	**12.1**	**3.0**	**-2.3**	**-8.4**

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Calculation Sheet

CU1-2 to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU1-2								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-37.1	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.7*	*-2.4*
Agr - Ground Attenuation								
	3.0	*0.6*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**24.9**	**25.6**	**24.3**	**16.4**	**8.4**	**-0.8**	**-6.2**	**-12.9**

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Calculation Sheet

CU3-5 to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU3-5								
-	**63.0**	**66.0**	**65.0**	**60.0**	**56.0**	**51.0**	**45.0**	**38.0**
Noise Control Treatments								
Treatment - LE1								
	-4.0	*-4.0*	*-5.0*	*-8.0*	*-12.0*	*-16.0*	*-15.0*	*-13.0*
Dc - Condenser Directivity								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Adiv - Geometrical Divergance								
	-37.1	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*	*-37.1*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.2*	*-0.7*	*-2.4*
Agr - Ground Attenuation								
	3.0	*0.6*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**24.9**	**25.6**	**24.3**	**16.4**	**8.4**	**-0.8**	**-6.2**	**-12.9**

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Calculation Sheet

CU6-8 to NSR1 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU6-8								
Sound Power Levels	**96.0**	**89.0**	**86.0**	**81.0**	**78.0**	**74.0**	**70.0**	**64.0**
Noise Control Treatments								
Treatment - AE1								
	-4.0	*-6.0*	*-12.0*	*-21.0*	*-27.0*	*-29.0*	*-29.0*	*-30.0*
Dc - Condenser Directivity								
	-0.9	*-2.2*	*-4.2*	*-6.0*	*-6.0*	*-6.0*	*-6.0*	*-6.0*
Adiv - Geometrical Divergance								
	-31.0	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.2*
Agr - Ground Attenuation								
	3.0	*1.0*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-7.8	*-5.8*	*-6.3*	*-6.5*	*-6.7*	*-7.1*	*-7.8*	*-8.9*
External Receiver								
External Receiver - NSR1 Day								
Sound Pressure, Lp:	**55.3**	**44.9**	**33.9**	**17.9**	**8.7**	**2.3**	**-2.6**	**-11.6**

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Calculation Sheet

CU6-8 to NSR2 Day

	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Noise Source								
Noise Source - CU6-8								
Sound Power Levels	**96.0**	**89.0**	**86.0**	**81.0**	**78.0**	**74.0**	**70.0**	**64.0**
Noise Control Treatments								
Treatment - AE1								
	-4.0	*-6.0*	*-12.0*	*-21.0*	*-27.0*	*-29.0*	*-29.0*	*-30.0*
Dc - Condenser Directivity								
	-0.9	*-2.2*	*-4.2*	*-6.0*	*-6.0*	*-6.0*	*-6.0*	*-6.0*
Adiv - Geometrical Divergance								
	-31.0	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*	*-31.0*
Aatm - Atmospheric Absorption								
	0.0	*0.0*	*0.0*	*0.0*	*0.0*	*-0.1*	*-0.3*	*-1.2*
Agr - Ground Attenuation								
	3.0	*1.0*	*1.4*	*1.5*	*1.5*	*1.5*	*1.5*	*1.5*
Abar - Barrier Attenuation								
	-7.8	*-5.8*	*-6.3*	*-6.5*	*-6.7*	*-7.1*	*-7.8*	*-8.9*
External Receiver								
External Receiver - NSR2 Day								
Sound Pressure, Lp:	**55.3**	**44.9**	**33.9**	**17.9**	**8.7**	**2.3**	**-2.6**	**-11.6**

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Appendix B

Noise Control Treatments

Schedule of Noise Control Treatments

Reference	Location	Description	Insertion Losses (dB)							
			63	125	250	500	1k	2k	4k	8k
None		None	0	0	0	0	0	0	0	0
AE1	CU6-8	High Performance Acoutsic Enclosure	4	6	12	21	27	29	29	30
LE1	CU1-5	AL1515	4	4	5	8	12	16	15	13

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