NSL Noise Solutions Ltd

Nationwide Building Society

25 Leys Avenue
Letchworth Garden City
SG6 3EU

Plant Noise
Impact Assessment

On behalf of

AMD Group

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T: 01252 519881
W: noisesolutions.co.uk
E: hello@noisesolutions.co.uk

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Prepared by:	Iyiola Bamgbose	MEng	IB	19th June 2025
Reviewed and approved by:	Jon Stump	BSc(Hons), MIOA	JS	19th June 2025
For and on behalf of Noise Solutions Ltd				

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Reg no. 3483481 Trading office 5 Oriel Court, Omega Park, Alton GU34 2YT

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1.0 Introduction

1.1. Noise Solutions Ltd (NSL) has been commissioned by AMD Group to provide a noise impact assessment of plant to serve a proposed Nationwide Building Society (NBS) branch located along Leys Avenue, Letchworth Garden City.

1.2. An environmental sound survey has been undertaken to establish the prevailing background sound pressure levels at a location representative of the sound levels outside the nearest noise sensitive receptors to the site.

1.3. Noise emissions from proposed plant have been predicted at the most affected noise sensitive receptors and assessed in accordance with the typical requirements of the local authority.

1.4. To assist with the understanding of this report, a glossary of acoustic terms can be found in **Appendix A**. An in-depth glossary of acoustic terms can be viewed online at www.acoustic-glossary.co.uk.

2.0 Details of development proposals

2.1. The branch is relocating from 16 Leys Avenue to 25 Leys Avenue as part of the branch enhancement programme. The new NBS branch will occupy the ground floor of a multi-storey building with the upper floors being used for residential dwellings.

2.2. The proposed external plant will at the rear of the store, on the east elevation. The site location is shown in **Appendix B**.

2.3. The plant is to consist of:

- 1No. VRF air conditioning (AC) unit
- 1No. condenser unit
- 1No. heat recovery unit (HRU) with an intake and outlet louvre
- 1No. extract fan exhaust

2.4. Manufacturer noise data for the equipment is given in **Appendix D**.

3.0 Nearest noise sensitive receptors

3.1. The area surrounding the site is both residential and commercial in nature. The nearest noise sensitive property to the plant location is the residential flat above the branch, Receptor R1.

3.2. Receptor R2 are the flats above 27 Leys Avenue approximately 9 metres away from the proposed plant location with full line of sight.

3.3. All other residential properties and commercial are further from the plant area, with many also being screened by buildings.

3.4. **Appendix B** contains an aerial photograph showing the site and surrounding area, including the location of the receptors identified above.

4.0 Existing noise climate

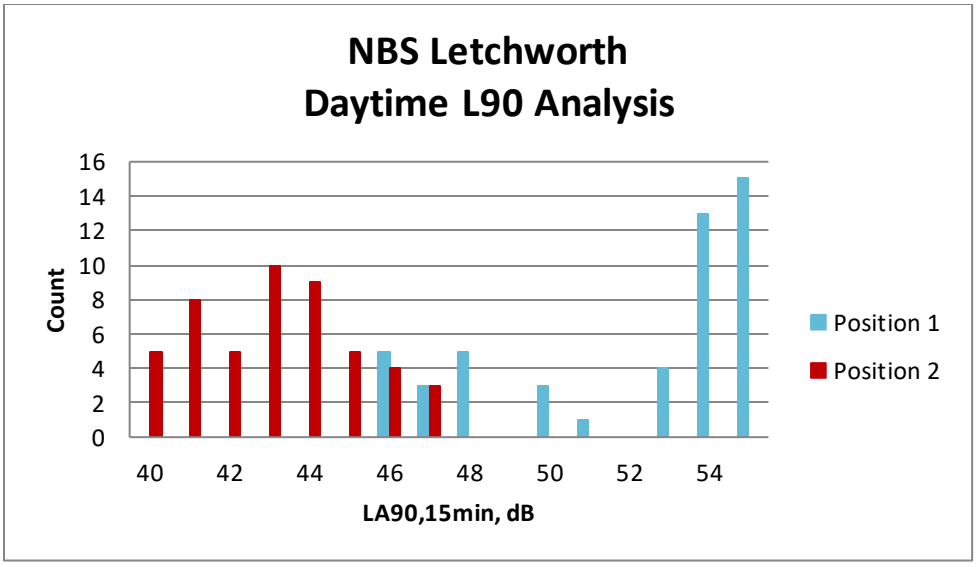
4.1. An environmental noise survey was undertaken to establish the typical background sound levels at a location representative of the noise climate outside the façades of the nearest noise sensitive receptors to the proposed plant, during the quietest times at which the plant will operate.

4.2. The results of the environmental sound survey are summarised in Table 1. The full set of measurement results and details of the survey methodology are presented in **Appendix C**.

Table 1 Summary of survey results

Position	Measurement period	Range of recorded sound pressure levels (dB)			
		$L_{AFmax(15mins)}$	$L_{Aeq(15mins)}$	$L_{A10(15mins)}$	$L_{A90(15mins)}$
1 - North	Daytime (07.00 – 23.00 hours)	52-70	69-97	52-64	46-55
	Night-time (23.00 – 07.00 hours)	43-56	49-81	45-54	41-46
2 - South	Daytime (07.00 – 23.00 hours)	43-62	58-88	44-63	40-47
	Night-time (23.00 – 07.00 hours)	41-51	50-81	43-54	40-44

Figure 1 Histogram of daytime L_{A90} background sound pressure levels

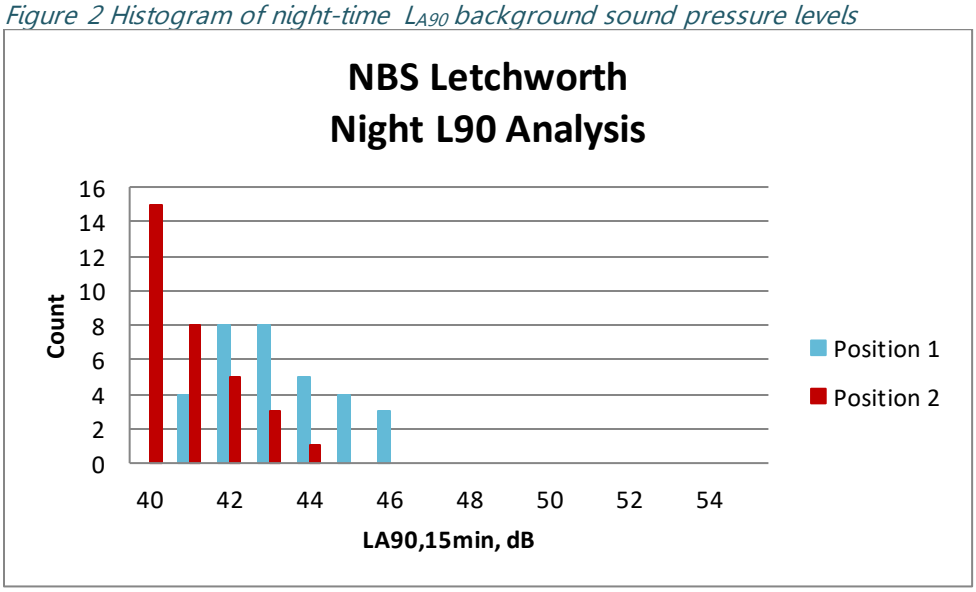


4.3. Additional statistical analysis has been undertaken. As shown in Table 2, the mean, median, and modal values have been calculated:

Table 2 Statistical analysis of $L_{A90,15min}$ levels during the daytime period

	dB, L_{A90} daytime period	
	Pos. 1	**Pos. 2**
mean	52	43
modal	55	43
median	54	43

Figure 2 Histogram of night-time L_{A90} background sound pressure levels



4.4. Additional statistical analysis has been undertaken. As shown in Table 3, the mean, median, and modal values have been calculated:

Table 3 Statistical analysis of $L_{A90,15min}$ levels during the night-time period

	dB, L_{A90} daytime period	
	Pos. 1	**Pos. 2**
mean	43	41
modal	43	40
median	43	41

4.5. Based on the histogram analyses above, the following values have been considered as representative of the existing background sound pressure levels at nearby noise sensitive premises:

- 48dB L_{A90} and 41dB L_{A90} during the daytime, at the north, and south of the site respectively
- 42dB L_{A90} and 40dB L_{A90} during the night-time, at the north and south of the site respectively

5.0 Plant noise design criteria

North Hertfordshire District Council

5.1. The NHDC Local Plan 2011-2031 Proposed submission was published in October 2016. Policy D3 *Protecting living conditions* states:

> *Planning permission will be granted for development proposals which do not cause unacceptable harm to living conditions.*
>
> *Where the living conditions of proposed developments would be affected by an existing use or the living conditions of an existing development would be affected by a proposed use, the Council will consider whether there are mitigation measures that can be taken to mitigate the harm to an acceptable level. If the Council is not satisfied that mitigation proposals would address the identified harm, development proposals will not be permitted.*

5.2. The narrative to the policy indicates that "such harm may arrive from … noise" as well as other issues.

National Planning Policy Framework

5.3. A new edition of the NPPF was published in December 2024 and came into effect immediately. The original National Planning Policy Framework (NPPF[1]) was published in March 2012, with subsequent revisions made periodically - this document replaced the existing Planning Policy Guidance Note 24 (PPG 24) "Planning and Noise." The December 2024 revised edition contains no new directions or guidance with respect to noise. The paragraph references quoted below relate to the December 2024 edition.

5.4. Paragraph 187 of the NPPF states that the planning system should contribute to and enhance the natural and local environment by, (amongst others) *"preventing new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability."*

5.5. The NPPF goes on to state in Paragraph 198:

"planning policies and decisions should ...

a) Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development, - and avoid noise giving rise to significant adverse impacts on health and quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason ...

5.6. The NPPF document does not refer to any other documents or British Standards regarding noise other than the Noise Policy Statement for England (NPSE[2]).

5.7. Paragraph 2 of the NPPF states that *"planning law requires that applications for planning permission be determined in accordance with the development plan unless material considerations indicate otherwise."*

5.8. Paragraph 12 of the NPPF states that *"The presumption in favour of sustainable development does not change the statutory status of the development plan as the starting point for decision making. Where a planning application conflicts with an up-to-date development plan (including any neighbourhood plans that form part of the development plan), permission should not usually be granted. Local planning authorities may take decisions that depart from an up-to-date development plan, but only if material considerations in a particular case indicate that the plan should not be followed".*

[1] National Planning Policy Framework, DCLG, March 2012

[2] Noise Policy Statement for England, DEFRA, March 2010

5.9. Paragraph 124 states that *"Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield' land"*.

BS 4142:2014+A1:2019

5.10. BS 4142:2014+A1:2019 *'Methods for rating and assessing industrial and commercial sound'* is intended to be used to assess the likely effects of sound on people residing in nearby dwellings. The scope of BS 4142:2014+A1:2019 includes *"sound from fixed plant installations which comprise mechanical and electrical plant and equipment"*.

5.11. The procedure contained in BS 4142:2014+A1:2019 provides an assessment of the likely effects of sound on people when comparing the specific noise levels from the source with representative background noise levels. Where the noise contains *"a tone, impulse or other characteristic"* then various corrections of can be added to the specific (source) noise level to obtain the "*rating level*". Specifically *"Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be* applied*"*.

5.12. The likely effects of sound on people are assessed by subtracting the background noise level from the rating level. BS 4142:2014+A1:2019 states the following:

- Typically, the greater this difference, the greater the magnitude of the impact.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context;
- 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.

5.13. BS 4142:2014+A1:2019 requires uncertainties in the assessment to be considered, and where the uncertainty is likely to affect the outcome of the assessment, steps should be taken to reduce the uncertainty.

Proposed criteria

5.14. It is proposed that the noise emitted by the proposed plant should be controlled, such that it does not exceed the representative L_{A90} background sound level at the nearest residential property. Doing so will ensure only a "low impact" when assessed in accordance with BS 4142:2014 at any local residential dwelling.

5.15. A summary of the recommended plant noise limits is given in Table 4

Table 4 Proposed plant noise emissions level limits at noise sensitive residential receptors

Receptor	Period	Cumulative specific plant noise level, dB(A)
Residential	Daytime (07.00 – 23.00 hours)	41
	Night-time (23.00 – 07.00 hours)	40

5.16. The above limits have not been approved by the local authority at this stage.

6.0 Plant noise impact assessment

6.1. Plant noise levels at the most affected noise sensitive receptors have been predicted based on the manufacturer's noise data for the approved equipment.

6.2. The assessment of proposed condenser unit has taken into consideration distance attenuation, screening and directivity. The predictions are inclusive of acoustic enclosures to:

- the VRF unit (CU01) providing an overall noise reduction of 21dB
- the condenser unit (CU02) providing an overall noise reduction of 10dB.

6.3. Noise levels for the proposed supply and extract systems have been predicted taking into account ductwork system losses, aperture size, directivity of sound propagation and distance attenuation. Predictions are inclusive of the following attenuators fitted to the systems:

Table 5 Proposed attenuators to ventilation plant

Attenuator	Insertion loss (dB) at octave band centre frequencies (Hz)							
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
EL01 (HRU Induct Intake)	5	9	16	28	35	35	32	26
EL02 (HRU Induct Discharge)	7	18	36	45	45	45	45	45
EL03 (Fan exhaust)	3	5	9	19	24	20	15	13

6.5. It should be noted that the proposed plant will operate during operational hours only and is not anticipated to exhibit any tonal or impulsive characteristics provided it is well maintained. All proposed external plant will be inverter driven and, therefore, will gently ramp up and down depending on the demands on the various systems. To provide a robust assessment, a 3dB acoustic feature correction as described in BS 4142:2014+A1:2019 for the possible presence of "*...characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment...*".

6.6. Table 6 summarises the results of the assessment outside the nearest noise-sensitive dwellings. All other nearby receptors benefit from increased distance/screening to the plant such that resulting noise levels will be lower than at the receptors considered. The full calculations are presented in **Appendix E**.

Table 6 Predicted plant noise levels at receptors

Receptor	Period	Predicted rating level at receptor, L_{Aeq} (dB)	Criterion (dBA)	Difference (dBA)
R1 (Residential)	Daytime (07.00 – 23.00 hours)	41	41	0
	Night-time (23.00 – 07.00 hours)	-	40	-
R2 (Residential)	Daytime (07.00 – 23.00 hours)	37	41	-4
	Night-time (23.00 – 07.00 hours)	-	40	-

Context and uncertainties

6.7. As BS 4142:2014 advises, the impact must be considered within the context of the site and the surrounding acoustic environment. The following must, therefore, also be taken into consideration when determining the potential impact that may be experienced:

- The assessment is undertaken at the nearest residential window. The impact on all other nearby residential windows will be lower due to screening and distance attenuation.
- The assessment has been made with all plant operating at maximum capacity, as this is not always the case, the assessment is an absolute worst case scenario.

6.8. Where possible uncertainty in the above assessments has been minimised by taking the following steps:

- The meter and calibrator used have a traceable laboratory calibration and the meter was field calibrated before and after the measurements.
- Uncertainty in the calculated impacts has been reduced by the use of a well-established calculation method.
- Calculations are based on a minimum distance of 3m between the plant and the nearest residential receptor.
- Care was taken to ensure that the measurement position was representative of the noise climate outside the nearby residential dwellings and not in a position where higher noise levels were present.

7.0 Summary

7.1. Noise Solutions Ltd (NSL) has been commissioned by AMD Group to provide a noise impact assessment for plant to serve a proposed Nationwide Building Society (NBS) store located along Leys Avenue, Letchworth Garden City.

7.2. An environmental sound survey has been undertaken to establish the prevailing background sound pressure levels at a location representative of the sound levels outside the nearest noise sensitive receptor to the plant area.

7.3. Cumulative plant noise emission levels for the plant have been predicted at the most affected noise sensitive receptors and assessed against the local authority's usual requirements.

7.4. Plant noise levels have been predicted at the nearest noise-sensitive receptors. The assessment demonstrates that noise from the proposed plant will comply with the local authority's usual requirements inclusive of the following mitigation measures:

- Suitably sized atmospheric-side attenuators fitted to all ventilation equipment.
- Suitable acoustic enclosure(s) fitted to the VRF and the smaller AC condenser unit providing an overall noise reduction of 21dBA and 10dB respectively.
- All plant and associated pipework/ductwork should be suitably vibration isolated from the structure.

7.5. Given the results of the assessment, noise should not be grounds for refusal of planning permission.

Appendix A Acoustic terminology

Parameter	Description
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 $\log_{10}$ (s1/s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20µPa. The threshold of normal hearing is in the region of 0 dB and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.
dB(A), L_{Ax}	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
Fast Time Weighting	Setting on sound level meter, denoted by a subscript F, that determines the speed at which the instrument responds to changes in the amplitude of any measured signal. The fast time weighting can lead to higher values than the slow time weighting when rapidly changing signals are measured. The average time constant for the fast response setting is 0.125 (1/8) seconds.
Free-field	Sound pressure level measured outside, far away from reflecting surfaces (except the ground), usually taken to mean at least 3.5 metres
Façade	Sound pressure level measured at a distance of 1 metre in front of a large sound reflecting object such as a building façade.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level recorded during a noise event with a period T. L_{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. $L_{A10,18h}$ is the A –weighted arithmetic average of the 18 hourly $L_{A10,1h}$ values from 06:00-24:00.
$L_{90,T}$	A noise level index. The noise level that is exceeded for 90% of the measurement time interval, T. It gives an indication of the lower levels of fluctuating noise. It is often used to describe the background noise level and can be considered to be the "average minimum" noise level and is a term used to describe the level to which non-specific noise falls during quiet spells, when there is lull in passing traffic for example.

Appendix B Photograph of site showing areas of interest

Appendix C Environmental sound survey

Details of environmental sound survey

C.1 Measurements of the existing environmental sound levels were undertaken between 14.30 hours on Monday 9th June and 10.30 hours on Tuesday 10th June 2025.

C.2 The sound level meter was programmed to record the A-weighted L_{eq}, L_{90}, L_{10} and L_{max} noise indices for consecutive fifteen-minute sample periods for the duration of the survey.

Measurement position

C.3 The sound level meter was positioned on a lamppost along Leys Avenue (position 1) and on a lamppost along Rowland Way (position 2). Position 2 is more representative of the noise climate at the windows overlooking the plant area.

C.4 The approximate locations of the microphones are indicated on the aerial photograph in **Appendix B**. In accordance with BS 7445-2:1991 *'Description and measurement of environmental noise – Part 2: Guide to the acquisition of data pertinent to land use'*, the measurements were undertaken under free-field conditions.

Equipment

C.5 Details of the equipment used during the survey are provided in the table below. The sound level meter was calibrated before and after the survey; no significant change (+/-0.2 dB) in the calibration level was noted.

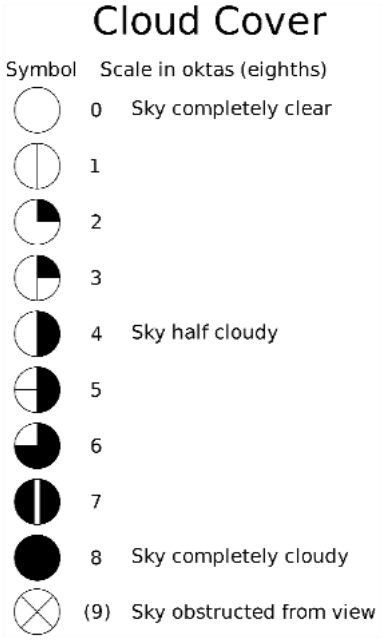
Description	Model / serial no.	Calibration date	Calibration certificate no.
Survey Position 1 (Leys Avenue)			
Class 1 Sound level meter	Svantek 977D / 99470	14/02/2024	Factory conformation certificate
Condenser microphone	Microtech MK255 / 26252		
Preamplifier	Svantek SV12L / 144633		
Calibrator	Svantek SV33B / 125706	03/09/2024	1509191-2

Description	Model / serial no.	Calibration date	Calibration certificate no.
Survey Position 2 (Rowland Way)			
Class 1 Sound level meter	Rion NL-52 / 00654035	13/05/2025	TCRT25/1385
Condenser microphone	Rion UC-59 / 14826		
Preamplifier	Rion NH-25 / 87474		
Calibrator	Rion NC-74 /34235932	09/10/2024	1509847-1

Weather conditions

C.6 Weather conditions were determined both at the start and upon completion of the survey. It is considered that the meteorological conditions were appropriate for environmental noise measurements.

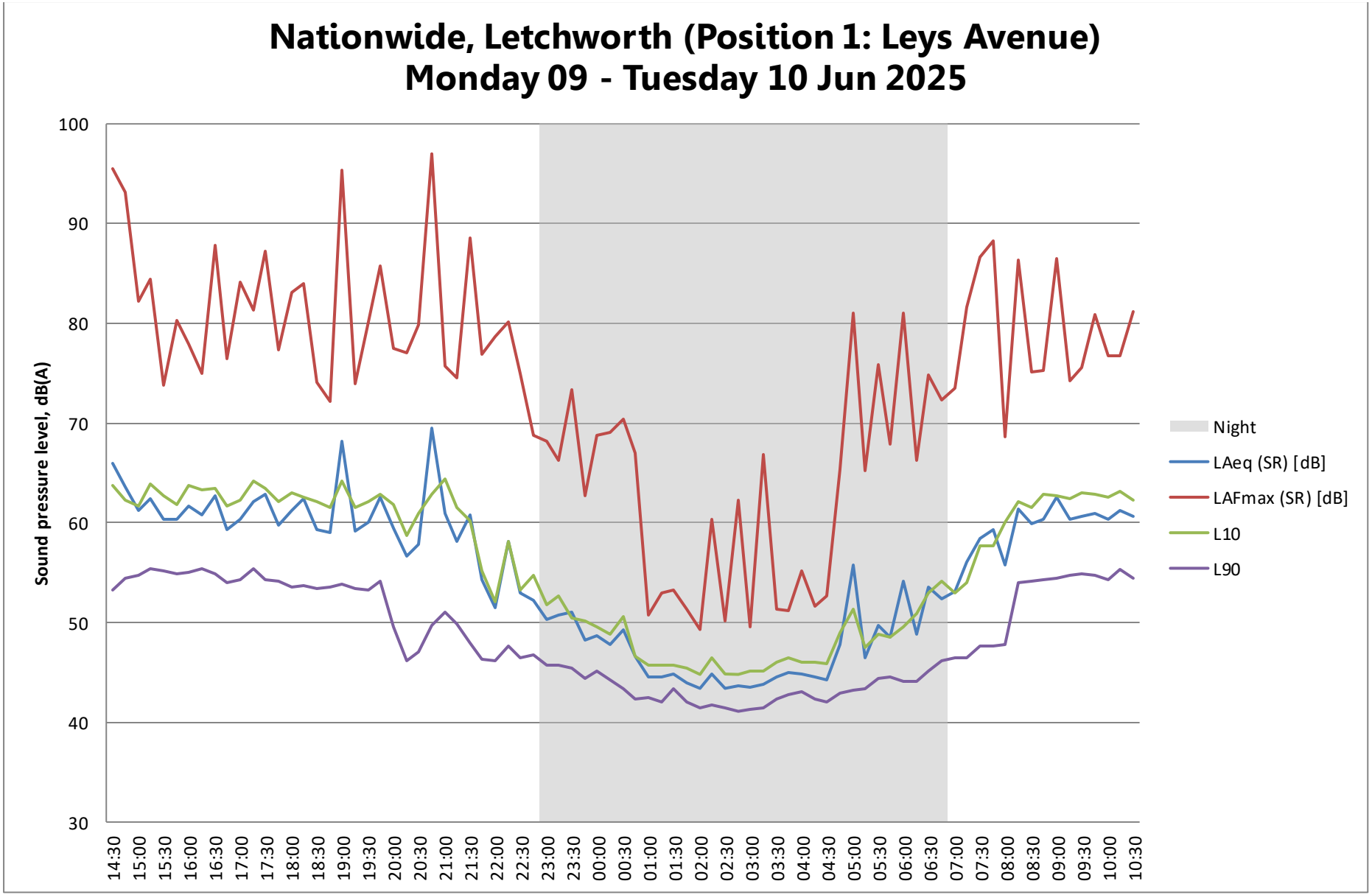
C.7 The table below presents the weather conditions recorded on site at the beginning and end of the survey.

Weather Conditions				
Measurement Location	**Time/Date**	**Description**	**Beginning of Survey**	**End of Survey**
As indicated on Appendix B	14.30 9 Jun – 10.30 10 Jun 2025	Temperature (°C)	18	18
		Precipitation:	No	Yes
		Cloud cover (oktas – see guide)	8	8
		Presence of fog/snow/ice	No	No
		Presence of damp roads/wet ground	No	Damp
		Wind Speed (m/s)	2.3	0.7
		Wind Direction	From SE	From NW
		Conditions that may cause temperature inversion (i.e. calm nights with no cloud)	No	No

Results

C.8 The results of the survey are considered to be representative of the background sound pressure levels at the façades of the most affected noise sensitive receptors to the plant area during the quietest times at which the plant will operate.

C.9 The noise climate at the measurement position was dominated local road traffic and plant with further influence to a lesser degree from power tools being used nearby during set up. The results of the survey are presented in a time history graph overleaf.


Nationwide, Letchworth (Position 1: Leys Avenue)
Monday 09 - Tuesday 10 Jun 2025
Sound pressure level, dB(A)
100
90
80
70
60
50
40
30
14:30
15:00
15:30
16:00
16:30
17:00
17:30
18:00
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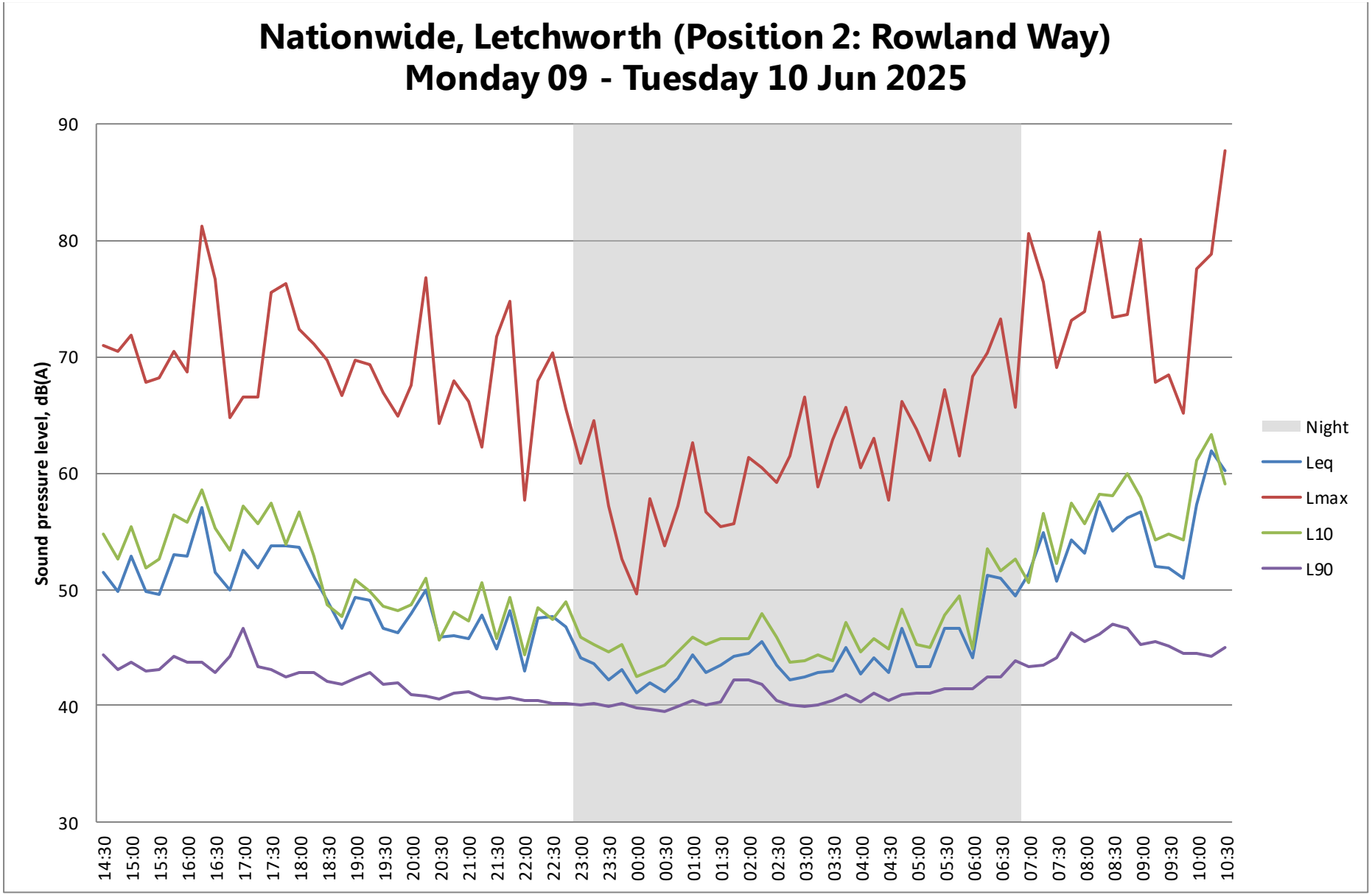
09:30
10:00
10:30
Night
LAeq (SR) [dB]
LAFmax (SR) [dB]
L10
L90


Nationwide, Letchworth (Position 2: Rowland Way)
Monday 09 - Tuesday 10 Jun 2025
Sound pressure level, dB(A)
90
80
70
60
50
40
30
14:30
15:00
15:30
16:00
16:30
17:00
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05:00
05:30
06:00
06:30
07:00
07:30
08:00
08:30
09:00
09:30
10:00
10:30
Night
Leq
Lmax
L10
L90

Appendix D Plant equipment and noise data

Reference	Make / Model	No. units	Notes	Sound levels, dB, at octave band frequencies (Hz)								
				63	125	250	500	1K	2K	4K	8K	L_{Aeq} (dB)
EL01	Nuaire / XBOXER XBC+ 25	1	Inlet L_w	77	71	69	71	66	62	54	53	71
EL02			Outlet, L_w	83	84	78	81	72	72	70	71	81
EL03 (extract fan)	Nuaire / Dave DE2-ES	1	Outlet, L_w	74	67	67	59	57	58	54	54	64
CU01	Toshiba / MMY-MAP1006FT8P-UK	1	L_w									82
CU02	Toshiba / RAS-16E2AVG-E	1	L_p at 1m									51

Appendix E Noise level predictions

EL01 Inlet

NSL Ref: **93375**
Project **Nationwide Letchworth**

Compiled by: JS 19/06/2025

Plant Ref **EL01**
Plant Description **Nuaire / XBOXER XBC+ 25 inlet**

SYSTEM LOSSES				9	5	1	0	0	0	0	0

Description			Notes.	Sound level (dB) at octave band centre frequencies (Hz)								dBA
				63	125	250	500	1k	2k	4k	8k	
Source noise level (unattenuated)			In-duct L_w	77	71	69	71	66	62	54	53	**71**
System losses				-9	-5	-1	0	0	0	0	0	
Atmospheric side attenuator			I.L.	-5	-9	-16	-28	-35	-35	-32	-26	
Sound power level leaving terminal				**63**	**57**	**52**	**43**	**31**	**27**	**22**	**27**	**47**
Receptor R1	V angle	H angle										
Directivity correction	90	45	500 x 500 (90,45)	-1	0	-1	-1	-6	-9	-9	-9	
Distance correction	3.3	m	3.3 m	-18	-18	-18	-18	-18	-18	-18	-18	
Screening correction	Screened:		δ= -3.3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Surface corrections etc												
Resultant at Receptor R1			L_p	**44**	**39**	**33**	**24**	**7**	**0**	**-5**	**0**	**28**
Receptor R2	V angle	H angle										
Directivity correction	0	45	500 x 500 (0,45)	1	2	2	3	3	4	4	4	
Distance correction	8.2	m	8.2 m	-26	-26	-26	-26	-26	-26	-26	-26	
Screening correction	Screened:		δ= -8.2	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Surface corrections etc												
Resultant at Receptor R2			L_p	**38**	**33**	**28**	**20**	**8**	**5**	**0**	**5**	**23**

EL02 Discharge

NSL Ref: **93375**
Project **Nationwide Letchworth**

Compiled by: JS 19/06/2025

Plant Ref **EL02**
Plant Description **Nuaire / XBOXER XBC+ 25 discharge**

SYSTEM LOSSES				9	5	1	0	0	0	0	0

Description			Notes.	Sound level (dB) at octave band centre frequencies (Hz)								dBA
				63	125	250	500	1k	2k	4k	8k	
Source noise level (unattenuated)			In-duct L_w	83	84	78	81	72	72	70	71	**81**
System losses				-9	-5	-1	0	0	0	0	0	
Atmospheric side attenuator			I.L.	-7	-18	-36	-45	-45	-45	-45	-45	
Sound power level leaving terminal				**67**	**61**	**41**	**36**	**27**	**27**	**25**	**26**	**47**
Receptor R1	V angle	H angle										
Directivity correction	90	0	500 x 500 (90,0)	0	0	0	0	-4	-7	-7	-7	
Distance correction	2.1	m	2.1 m	-14	-14	-14	-14	-14	-14	-14	-14	
Screening correction	Screened:		δ= -2.1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Surface corrections etc												
Resultant at Receptor R1			L_p	**53**	**47**	**27**	**22**	**9**	**6**	**4**	**5**	**33**
Receptor R2	V angle	H angle										
Directivity correction	0	45	500 x 500 (0,45)	1	2	2	3	3	4	4	4	
Distance correction	9.4	m	9.4 m	-27	-27	-27	-27	-27	-27	-27	-27	
Screening correction	Screened:		δ= -9.4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Surface corrections etc												
Resultant at Receptor R2			L_p	**41**	**36**	**16**	**12**	**3**	**4**	**2**	**3**	**22**

EL03 Discharge

NSL Ref: **93375**
Project **Nationwide Letchworth**

Compiled by: JS 19/06/2025

Plant Ref **EL03**
Plant Description **Nuaire / Dave DE2-ES**

SYSTEM LOSSES				12	8	4	1	0	0	0	0

Description			Notes.	Sound level (dB) at octave band centre frequencies (Hz)								dBA
				63	125	250	500	1k	2k	4k	8k	
Source noise level (unattenuated)			In-duct L_w	74	67	67	59	57	58	54	54	**65**
System losses				-12	-8	-4	-1	0	0	0	0	
Atmospheric side attenuator			I.L.	-3	-5	-9	-19	-24	-20	-15	-13	
Sound power level leaving terminal				**59**	**54**	**54**	**39**	**33**	**38**	**39**	**41**	**49**
Receptor R1	V angle	H angle										
Directivity correction	135	45	300 x 300 (135,45)	-2	-2	-4	-7	-10	-10	-10	-10	
Distance correction	5.7	m	5.7 m	-23	-23	-23	-23	-23	-23	-23	-23	
Screening correction	Screened:	5.7001	δ= 1E-04	**-5**	**-5**	**-5**	**-5**	**-5**	**-5**	**-5**	**-5**	
Surface corrections etc												
Resultant at Receptor R1			L_p	**29**	**24**	**22**	**4**	**-5**	**0**	**1**	**3**	**16**
Receptor R2	V angle	H angle										
Directivity correction	0	55	300 x 300 (0,55)	1	2	2	3	3	4	4	4	
Distance correction	10	m	10 m	-28	-28	-28	-28	-28	-28	-28	-28	
Screening correction	Screened:		δ= -10	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	
Surface corrections etc												
Resultant at Receptor R2			L_p	**32**	**28**	**28**	**14**	**8**	**14**	**15**	**17**	**24**

Condensers – Receptor R1

Unit	Make / Model	LpA	at / m	Distance m	dB	Directivity	Screening	Result
CU02	Toshiba / RAS-16E2AVG-E	51	1	7	-17		-10	24
CU01	Toshiba / MMY-MAP1006FT8P-UK	74	1	7	-17		-21	36

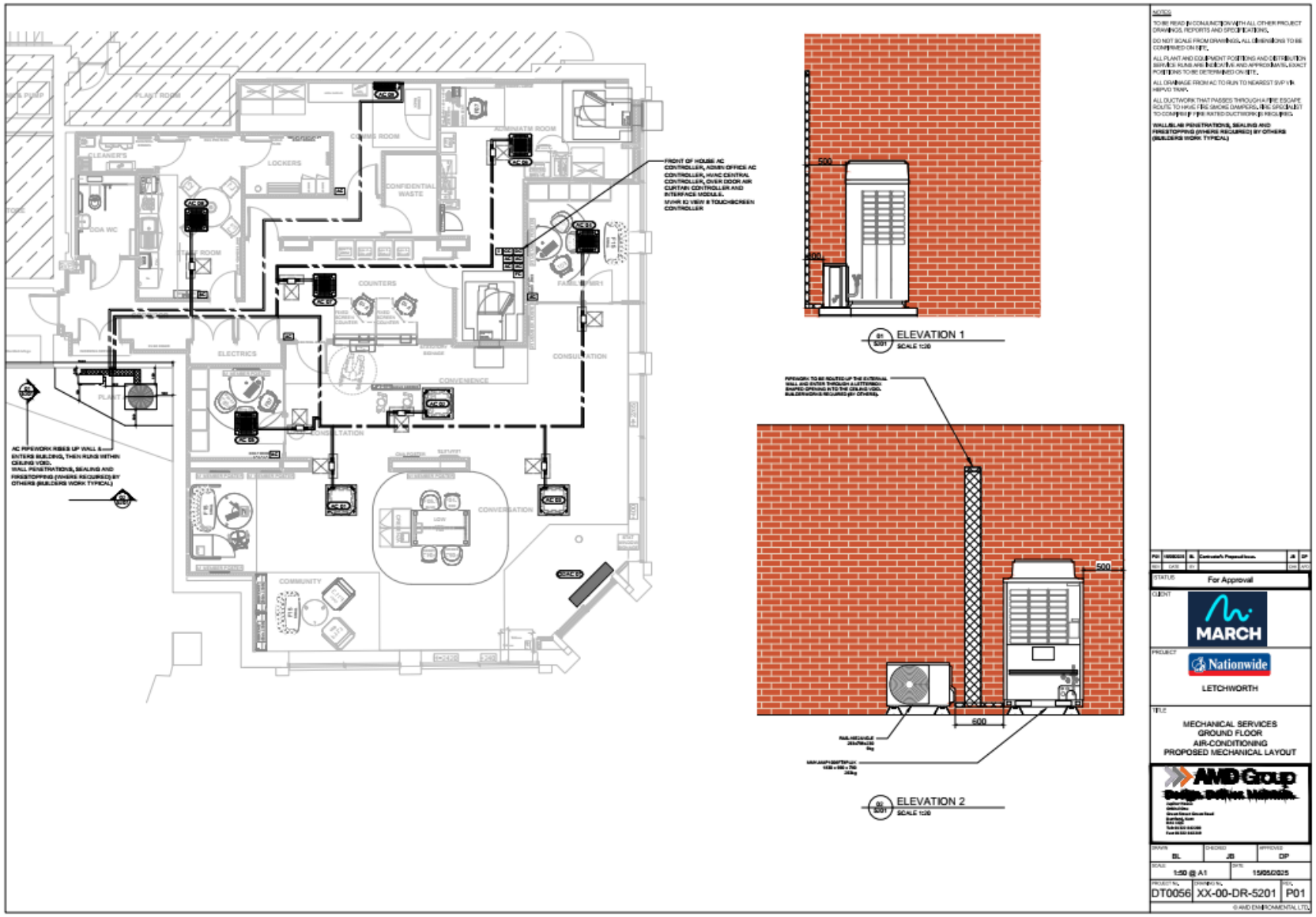
Condensers – Receptor R2

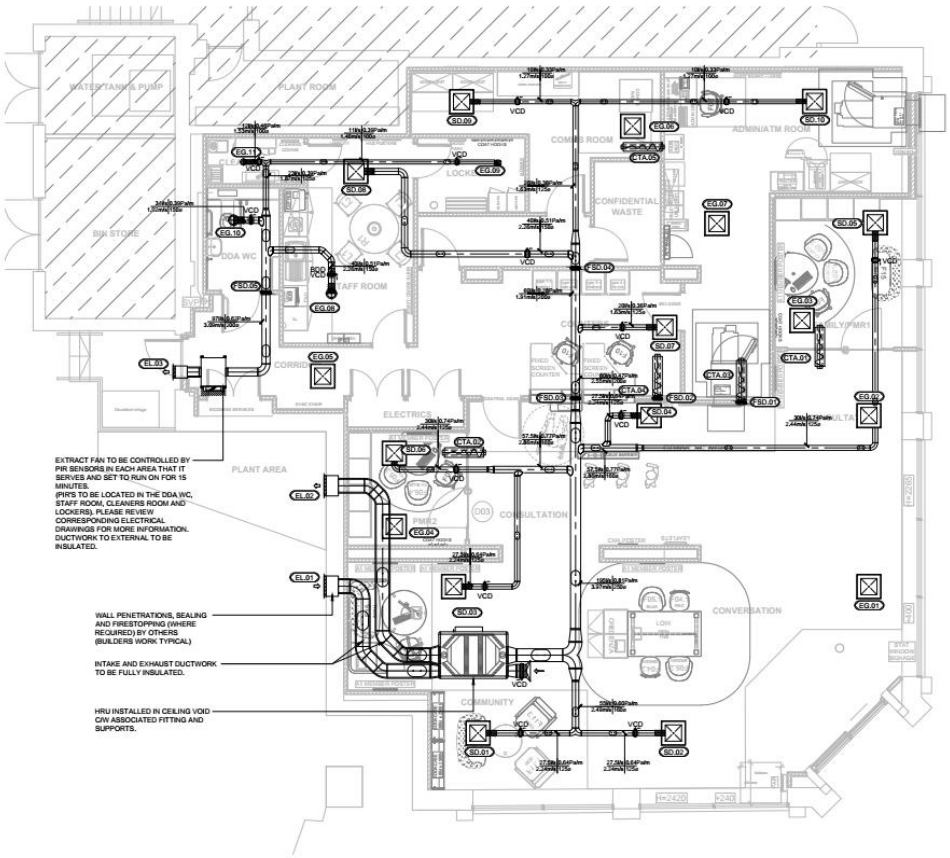
Unit	Make / Model	LpA	at / m	Distance m	dB	Directivity	Screening	Result
CU02	Toshiba / RAS-16E2AVG-E	51	1	9.6	-20		-10	21
CU01	Toshiba / MMY-MAP1006FT8P-UK	74	1	9.6	-20		-21	33

Summary

Plant	R1 dB(A)	R2 dB(A)
EL01	25	19
EL02	33	22
EL03	16	24
CU2	24	21
CU1	36	33
Combined plant L_p (Daytime) All plant running	**38**	**34**
Acoustic feature correction	**+3**	**+3**
Rating level	**41**	**37**

Appendix F Plant layout





NOTES

TO BE READ IN CONJUNCTION WITH ALL OTHER PROJECT DRAWINGS, REPORTS AND SPECIFICATIONS.

DO NOT SCALE FROM DRAWINGS, ALL DIMENSIONS TO BE CONFIRMED ON SITE.

ALL PLANT AND EQUIPMENT POSITIONS AND DISTRIBUTION SERVICE RUNS ARE INDICATIVE AND APPROXIMATE. EXACT POSITIONS TO BE DETERMINED ON SITE.

ALL DRAINAGE FROM AC TO RUN TO NEAREST SVP V/A HEPVO TRAP.

ALL DUCTWORK THAT PASSES THROUGH A FIRE ESCAPE ROUTE TO HAVE FIRE SMOKE DAMPERS, FIRE SPECIALIST TO CONFIRM IF FIRE RATED DUCTWORK IS REQUIRED.

WALLS/SLAB PENETRATIONS, SEALING AND FIRESTOPPING (WHERE REQUIRED) BY OTHERS (BUILDERS WORK TYPICAL)

- SUPPLY/EXTRACT GRILLE
- EXTRACT AIR VALVE
- VCD — VOLUME CONTROL DAMPER
- ACCESS
- FIRE DAMPER/FIRE SMOKE DAMPER
- BDD — BACK DRAUGHT DAMPER
- EL.XX — EXTERNAL LOUVRE

REV	DATE	BY		CHK	APD
P01	15/05/2025	BL	Contractor's Proposal Issue.	JB	DP

STATUS: For Approval

CLIENT: MARCH

PROJECT: Nationwide LETCHWORTH

TITLE: MECHANICAL SERVICES GROUND FLOOR VENTILATION PROPOSED MECHANICAL LAYOUT

AMD Group — Design. Deliver. Maintain.
Jupiter House
Orbital One
Green Street Green Road
Dartford, Kent
DA1 1QB
Tel: 01322 842280
Fax: 01322 842219

DRAWN	CHECKED	APPROVED
BL	JB	DP

SCALE	DATE
1:50 @ A1	15/05/2025

PROJECT No.	DRAWING No.	REV.
DT0056	XX-00-DR-5101	P01

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