21-25 NORTHUMBERLAND RD, PASCOE VALE

Planning Stage Acoustic Assessment

Lofe Group

14 OCTOBER 2021

Octave Acoustics
ABN 60 615 372 873
Ph +61 3 9492 5990
1A, 3 Harris Street, Yarraville
Melbourne, Vic 3013

Project	21-25 Northumberland Rd, Pascoe Vale
Client	Lofe Group
Document number	AB593MB-01E02 Acoustic assessment (r0)

Revision	Date	Comment	Author	Reviewer
0	14.10.2021	Issued to Client	RB	AL

Disclaimer:

The information contained within this document has been prepared by Octave Acoustics Pty Ltd under briefing instructions, caveats and terms and conditions accepted by both the Client and Octave Acoustics Pty Ltd. The information contained within this document should not be relied upon by any third parties or applied under any context other than that described within this document.

The information within this report shall remain the property of Octave Acoustics Pty Ltd. Octave Acoustics Pty Ltd shall retain all common law, statutory and other reserved rights, including copyright thereto. As such the information contained within this report should not be distributed to third parties without the written consent of Octave Acoustics Pty Ltd.

Table of Contents

1 Introduction

Octave Acoustics was engaged by Lofe Group to provide a planning stage acoustic assessment for the proposed Big Build housing development at 21-25 Northumberland Road, Pascoe Vale. The Development consists of 70 apartments over 6 levels. The site is zoned Residential Growth Zone 2 (RGZ2) and is surrounded by:

- Northumberland Road to the east with single residential dwellings on land zoned General Residential (GRZ1) beyond.
- A townhouse development to the south (RGZ2).
- Townhouse developments to the west (RGZ2) with land zoned Industrial 3 (INZ3) some 70m beyond.
- Single residential dwellings (RGZ2) to the north with Fawkner Road beyond.

2 Site Evaluation

Octave Acoustics carried out on-site unattended noise monitoring from Tuesday the 5th to Tuesday the 12th of October 2021. The monitoring location was as shown in Figure 1 below with the microphone set at 1.2m above the roof deck of the carport.

Measurements were carried out using an NTI XL2 meter which was calibrated before and after the monitoring period using a Bruel Kjaer 4320 calibrator. No drift in calibration was detected. The NTI XL2 complies with the requirements of IEC 61672-1.2013 Sound Level Meters and is classified as a Class 1 instrument. The calibrator complies with the requirements of IEC 60942.2004 Sound Calibrators. Both the XL2 and calibrator carry current NATA certification or manufacturers certification if less than two years old.

A summary of key results from the monitoring period are presented in Table 1 and Table 2 below. The noise monitoring graph is presented in Appendix B.

TABLE 1 – SUMMARY OF AVERAGE AMBIENT NOISE LEVELS, LAEQ

Date	Result, dB LAeq	
	Day (6am – 10pm)	Night (10pm – 6am)
Tuesday 5th October	-	48.4
Wednesday 6th October	54.2	49
Thursday 7th October	55.1	49.1
Friday 8th October	56.3	43.1
Saturday 9th October	54.6	46.5
Sunday 10th October	55.2	45.6
Monday 11th October	56.5	48.4
Worst Case Representative Level	57	49

TABLE 2 – SUMMARY OF AMBIENT BACKGROUND NOISE LEVELS, LA90

Period	Background Noise Level, dB LA90
Day	36
Evening	29
Night	26

FIGURE 1 – SUBJECT SITE

3 Criteria

3.1 Planning Scheme

Clause 52.20-7.7 of the Victorian planning provisions apply to projects delivered as part of Victoria's Big Housing Build. Clause 52.20-7.7 requires that buildings within a noise influence area as specified in Table 3 below be designed and constructed to achieve the following noise levels:

- Not greater than 35dB(A) for bedrooms, assessed as an LAeq 8hr (10pm – 6am).
- Not greater than 40dB(A) for living areas, assessed as an LAeq 16hr (6am – 10pm)

Clause 52.20-7.7 states that buildings, or part of a building screened from noise by an existing structure, or the natural topography of the land, do not need to meet the specified noise level requirements.

Noise levels are to be assessed in unfurnished rooms with a finished floor and the windows closed.

TABLE 3 – NOISE INFLUENCE AREA

Noise Source	Noise Influence Area
Industry	300m from the Industrial 1, 2 and 3 zone boundary.
Freeways, tollways and other roads carrying 40,000 Annual Average Daily Traffic Volume.	300m from the nearest trafficable lane.
Railways servicing passengers in Victoria	80m from the centre of the nearest track
Railways servicing freight outside Metropolitan Melbourne	80m from the centre of the nearest track
Railways servicing freight in Metropolitan Melbourne	135m from the centre of the nearest track

The subject site falls outside the noise influence areas triggered by roads and railways but does lie within 300m of an Industrial 3 zone (INZ3), refer to Figure 1 above. As such, assessment is required to demonstrate that resultant industrial noise levels will not exceed the criteria set out in 52.20-7.7 inside the proposed units.

3.2 Environment Protection Regulations

3.2.1 Base Building Plant

Noise associated with base building plant and services is required to comply with Part 5.3 of the *Environment Protection Regulations 2021* (EPR 2021). *EPA Victoria Noise Limit and Assessment Protocol for the Control of Noise from Commercial, Industrial and Trade Premises and Entertainment*

Venues Publication 1826.4 (Publication 1826.4) provides a protocol for determining EPR 2021 noise limits and carrying out subsequent assessment of noise impacts.

EPR 2021 is a regulation under the *Environment Protection Act 2017* (EP Act) and compliance is mandatory when noise levels are assessed at noise sensitive areas which includes residential properties. The applicable EPR 2021 noise limits for plant and services noise emissions have been calculated and are presented in Table 4.

TABLE 4 – EPR 2021 NOISE CRITERIA FOR BASE BUILDING PLANT

Period	Background Noise Level, LA90	Zoning Level, LAeq	Background Classification	Applicable Noise Limit, LAeq
Day	36	50	Low	48
Evening	29	44	Low	40
Night	26	39	Low	36

Notes:

1. *Day period is:*
   - *07:00 – 18:00 Monday – Saturday (except public holidays)*
2. *Evening period is:*
   - *18:00 – 22:00 Monday – Saturday*
   - *07:00 – 22:00 Sunday and public holidays*
3. *Night period is:*
   - *22:00 – 07:00 Monday – Sunday*
4. *Where the noise source under consideration is equipment used solely in relation to*
   i. *emergencies (such as fire pumps, standby generators, stair pressurisation and smoke spill fans), the relevant noise limit applying to the testing or maintenance of such equipment is increased by 10dB for the day period and 5dB for the evening and night periods.*

3.2.2 Domestic Plant

Noise impacts associated with the operation of domestic plant is subject to the *Environment Protection Regulations 2021* (Regulations) under the *Environment Protection Act 2017*. The Regulations state that domestic plant noise shall not be unreasonable at residential premises.

EPA *Noise Guideline: Assessing Noise from Residential Equipment* (Publication 1973) provides guidance as to what constitutes unreasonable noise. Publication 1973 states that noise affecting adjacent residential properties shall not be audible (indoors) during prohibited periods as defined by Publication 1973. At all other times noise shall not exceed the background noise level by more than 5dB. A summary of the prohibited periods and associated criteria are presented in Table 5.

TABLE 5 – EP REGULATION NOISE CRITERIA FOR DOMESTIC PLANT

Period	Background Noise Level, LA90	Applicable Noise Limit, LAeq
Prohibited period	36	41
Other periods	26	21

Notes:

1. *For heating equipment (including central heating, a hot water system or a heat pump, A/C or split system used for heating), a vacuum cleaner, swimming pool pump, spa pump, and water pump (other than a pump being used to fill a header tank) the prohibited period is defined as:*
   - *22:00 – 07:00 Monday – Friday*
   - *22:00 – 09:00 Weekend and public holidays*
2. *For A/C, evaporative cooling, or split system used for cooling the prohibited period is defined as:*
   - *23:00 – 07:00 Monday – Friday*
   - *23:00 – 09:00 Weekend and public holidays*

3.3 DELWP Commentary

In review of the proposal, DELWP has made the following observations:

"… The use of the internal voids for daylight to bedrooms must ensure noise impacts are addressed to comply with the requirements of Clause 52.20-7.7, specifically the requirement that noise sensitive rooms (such as living areas and bedrooms) should be located to avoid noise impacts from mechanical plants, lifts, building services, non-residential uses, car-parking, communal areas and other dwellings."

4 Assessment

This assessment was carried out with respect to revision B of the project architectural plans dated 27 September 2021.

4.1 External Noise Intrusion (Planning Scheme)

The results of noise monitoring were assessed to identify the worst-case environmental noise incident on the facades of the development (refer to Table 1). Environmental noise intrusion to the proposed units was calculated using standard transmission loss algorithms. A performance requirement for the glazing and facade system was developed to satisfy the requirements of Clause 52.20-7.7 of the Victorian planning provisions. The resulting performance requirements (Rw) are presented in Table 6 below.

TABLE 6 – MINIMUM PERFORMANCE REQUIREMENT FOR GLAZING SYSTEMS, RW

Room	Performance Requirement for Glazing Assembly including Frame and Seals	Indicative Glazing[1,2]
All	$R_w \geq 28$	Glazing system incorporating one pane of float glass not less than 6mm thick. OR An insulated double glazed unit consisting of two panes of glass not less than 4mm thick separated by a 12mm air-gap.
Note:	1. *Indicative glazing details are provided for informative purposes only. The builder may use other glass, seal and framing combinations that also satisfy the established Rw performance requirement.* 2. *Operable windows to include EPDM seals. Sliding doors to include full perimeter double wool pile seals.* 3. *Opaque sections of the façade shall be rated to Rw+Ctr ≥ the glazing performance requirement (Rw) + 10dB.*	

4.2 Noise Emissions - Mechanical Plant

It is important to note that at this early stage of the project a full quantitative assessment of noise emissions from the proposed plant and equipment is not possible as mechanical concepts, designs or plant selections have not yet been developed. However, Octave Acoustics' experience is that the plant and equipment typical of this type of development can easily be designed, incorporating industry standard attenuation treatments as necessary to comfortably comply with the requirements of both EPR 2021 in relation to base-building plant and equipment (Table 4) as well as domestic plant and equipment (Table 5).

4.3 Commentary for DELWP

Internal Voids for Daylighting

It is noted that internal voids or 'lightwells' have been known to result in acoustic issues within multi-residential buildings. However, this typically occurs where the lightwell is a confined shaft-like space with issues arising from the 'reverberation chamber' effect of the space. This problem is commonly dealt with by the addition of acoustic absorption to 'suck up' excess noise within the lightwell.

The internal voids at 21-15 Northumberland Street are configured not as solid confined spaces, instead they incorporate openings and perforations which allow any excess noise to dissipate (equivalent to the outcome achieved with the installation of acoustic absorption to traditional, solid lightwells).

Lift Noise

Unlike many multi-residential developments, the floor plates at 21-15 Northumberland Street have been configured such that no noise sensitive room shares a wall with a lift-shaft. Further, only one unit (adjacent the south lift core) shares a wall with a lift shaft with the adjacent spaces principally being non-sensitive bathrooms and apartment entry areas. Nonetheless, potential lift noise will be mitigated by the provision of a separate stud wall and acoustic insulation between the lift core and adjacent apartments.

Rooftop Terrace

It is noted that the roof terrace is located immediately above an apartment. If untreated, foot fall noise may result in adverse amenity impacts to the apartment below. Potential foot fall noise will be controlled to acceptable levels via the installation of terrace pavers on polypads atop 5mm thick acoustic pads, atop the standard waterproofing membrane. Furthermore, acoustic insulation will be installed to the ceiling cavities of the apartment below. These treatments will result in floor impact performance significantly better than the minimum required under the Building Code of Australia / National Construction Code.

5 Conclusion

Octave Acoustics has completed a planning stage acoustic assessment for the proposed Big Build housing development at 21-25 Northumberland Road, Pascoe Vale. The assessment considered both the applicable requirements of the Victorian Planning Scheme as well the Environmental Protection Regulations (EPRs) for noise emissions from plant and equipment.

Results of the assessment indicate that noise from the proposed plant and equipment can comfortably comply with the relevant EPR requirements at surrounding noise sensitive (residential) premises. Results also indicate that environmental noise (including potential industrial noise) will comfortably comply with the relevant requirements of Clause 52.20-7.7 of the planning scheme (using standard commercial glazing and façade constructions).

Appendix A: Glossary of Acoustic Terms

'A' FREQUENCY WEIGHTING

The 'A' frequency weighting roughly approximates to the Fletcher-Munson 40 phon equal loudness contour. The human loudness perception at various frequencies and sound pressure levels is equated to the level of 40 dB at 1 kHz. The human ear is less sensitive to low frequency sound and very high frequency sound than midrange frequency sound (i.e. 500 Hz to 6 kHz). Humans are most sensitive to midrange frequency sounds, such as a child's scream. Sound level meters have inbuilt frequency weighting networks that very roughly approximates the human loudness response at low sound levels. It should be noted that the human loudness response is not the same as the human annoyance response to sound. Here low frequency sounds can be more annoying than midrange frequency sounds even at very low loudness levels. The 'A' weighting is the most commonly used frequency weighting for occupational and environmental noise assessments. However, for environmental noise assessments, adjustments for the character of the sound will often be required.

AMBIENT NOISE

The ambient noise level at a particular location is the overall environmental noise level caused by all noise sources in the area, both near and far, including all forms of traffic, industry, lawnmowers, wind in foliage, insects, animals, etc. Usually assessed as an energy average over a set time period 'T' ($L_{Aeq,T}$).

AUDIBLE

Audible refers to a sound that can be heard. There are a range of audibility grades, varying from "barely audible", "just audible" to "clearly audible" and "prominent".

BACKGROUND NOISE LEVEL

Total silence does not exist in the natural or built-environments, only varying degrees of noise. The Background Noise Level is the minimum repeatable level of noise measured in the absence of the noise under investigation and any other short-term noises such as those caused by all forms of traffic, industry, lawnmowers, wind in foliage, insects, animals, etc. It is quantified by the noise level that is exceeded for 90 % of the measurement period 'T' ($L_{A90,T}$). Background Noise Levels are often determined for the day, evening and night time periods where relevant. This is done by statistically analysing the range of time period (typically 15 minute) measurements over multiple days (often 7 days). For a 15-minute measurement period the Background Noise Level is set at the quietest level that occurs at 1.5 minutes.

'C' FREQUENCY WEIGHTING

The 'C' frequency weighting approximates the 100 phon equal loudness contour. The human ear frequency response is more linear at high sound levels and the 100 phon equal loudness

contour attempts to represent this at various frequencies at sound levels of approximately 100 dB.

DECIBEL

The decibel (dB) is a logarithmic scale that allows a wide range of values to be compressed into a more comprehensible range, typically 0 dB to 120 dB. The decibel is ten times the logarithm of the ratio of any two quantities that relate to the flow of energy (i.e. power). When used in acoustics it is the ratio of the square of the sound pressure level to a reference sound pressure level, the ratio of the sound power level to a reference sound power level, or the ratio of the sound intensity level to a reference sound intensity level. See also Sound Pressure Level and Sound Power Level. Noise levels in decibels cannot be added arithmetically since they are logarithmic numbers. If one machine is generating a noise level of 50 dB, and another similar machine is placed beside it, the level will increase to 53 dB (from 10 $\log_{10}(10^{(50/10)} + 10^{(50/10)})$ and not 100 dB. In theory, ten similar machines placed side by side will increase the sound level by 10 dB, and one hundred machines increase the sound level by 20 dB. The human ear has a vast sound-sensitivity range of over a thousand billion to one, so the logarithmic decibel scale is useful for acoustical assessments.

dBA – See 'A' frequency weighting

dBC – See 'C' frequency weighting

EQUIVALENT CONTINUOUS SOUND LEVEL, LAeq

Many sounds, such as road traffic noise or construction noise, vary repeatedly in level over a period of time. More sophisticated sound level meters have an integrating/averaging electronic device inbuilt, which will display the energy time-average (equivalent continuous sound level - L_{Aeq}) of the 'A' frequency weighted sound pressure level. Because the decibel scale is a logarithmic ratio, the higher noise levels have far more sound energy, and therefore the L_{Aeq} level tends to indicate an average which is strongly influenced by short-term, high level noise events. Many studies show that human reaction to level-varying sounds tends to relate closer to the L_{Aeq} noise level than any other descriptor.

'F'(FAST) TIME WEIGHTING

Sound level meter design-goal time constant which is 0.125 seconds.

FREE FIELD

In acoustics a free field is a measurement area not subject to significant reflection of acoustical energy. A free field measurement is typically not closer than 3.5 metres to any large flat object (other than the ground) such as a fence or wall or inside an anechoic chamber.

FREQUENCY

The number of oscillations or cycles of a wave motion per unit time, the SI unit is the hertz (Hz). 1 Hz is equivalent to one cycle per second. 1000 Hz is 1 kHz.

LOUDNESS

The volume to which a sound is audible to a listener is a subjective term referred to as loudness. Humans generally perceive an approximate doubling of loudness when the sound level increases by about 10 dB and an approximate halving of loudness when the sound level decreases by about 10 dB.

MAXIMUM NOISE LEVEL, LAFmax

The root-mean-square (rms) maximum sound pressure level measured with sound level meter using the 'A' frequency weighting and the 'F' (Fast) time weighting. Often used for noise assessments other than aircraft.

MAXIMUM NOISE LEVEL, LASmax

The root-mean-square (rms) maximum sound pressure level measured with sound level meter using the 'A' frequency weighting and the 'S' (Slow) time weighting. Often used for aircraft noise assessments.

NOISE

Noise is unwanted, harmful or inharmonious (discordant) sound. Sound is wave motion within matter, be it gaseous, liquid or solid. Noise usually includes vibration as well as sound.

OFFENSIVE NOISE

Reference: Dictionary of the NSW Protection of the Environment Operations Act 1997).

"Offensive Noise means noise:

(a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:

(i) is harmful to (or likely to be harmful to) a person who is outside the premise from which it is emitted, or

(ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or

(b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances prescribed by the regulations."

'S' (SLOW) TIME WEIGHTING

Sound level meter design-goal time constant which is 1 second.

SOUND ATTENUATION

A reduction of sound due to distance, enclosure or some other devise. If an enclosure is placed around a machine, or an attenuator (muffler or silencer) is fitted to a duct, the noise emission

is reduced or attenuated. An enclosure that attenuates the noise level by 20 dB reduces the sound energy by one hundred times.

SOUND EXPOSURE LEVEL (LAE)

Integration (summation) rather than an average of the sound energy over a set time period. Use to assess single noise events such as truck or train pass by or aircraft flyovers. The sound exposure level is related to the energy average ($L_{Aeq,T}$) by the formula $L_{Aeq,T}$ = LAE – 10 $\log_{10}$ T. The abbreviation (SEL) is sometimes inconsistently used in place of the symbol (LAE).

SOUND PRESSURE

The rms sound pressure measured in pascals (Pa). A pascal is a unit equivalent to a newton per square metre (N/m^2).

SOUND PRESSURE LEVEL, L_p

The level of sound measured on a sound level meter and expressed in decibels (dB). Where L_P = 10 $\log_{10}(P_a/P_o)^2$ dB (or 20 $\log_{10}$ (P_a/ P_o) dB) where Pa is the rms sound pressure in Pascal and Po is a reference sound pressure conventionally chosen is 20 µPa (20 x 10^{-6} Pa) for airborne sound. L_p varies with distance from a noise source.

SOUND POWER

The rms sound power measured in watts (W). The watt is a unit defined as one joule per second. A measures the rate of energy flow, conversion or transfer.

SOUND POWER LEVEL, L_w

The sound power level of a noise source is the inherent noise of the device. Therefore, sound power level does not vary with distance from the noise source or with a different acoustic environment. L_w = L_p + 10 $\log_{10}$ 'a' dB,

re: 1pW, (10^{-12} watts) where 'a' is the measurement noise-emission area (m^2) in a free field.

SOUND TRANSMISSION LOSS

The amount in decibels by which a random sound is reduced as it passes through a sound barrier. A method for the measurement of airborne Sound Transmission Loss of a building partition is given in Australian Standard AS1191 - 2002.

STATISTICAL NOISE LEVELS, L_n

Noise which varies in level over a specific period of time 'T' (standard measurement times are often 15-minute periods) may be quantified in terms of various statistical descriptors with some common examples:

The noise level, in decibels, exceeded for 1% of the measurement time period, when 'A' frequency weighted and 'F' time weighted is reference to as $L_{AF1,T}$. This may be used for describing short-term noise levels such as could cause sleep arousal during the night.

The noise level, in decibels, exceeded for 10% of the measurement time period, when 'A' frequency weighted and 'F' time weighted is reference to as $L_{AF10,T}$. In most countries the $L_{AF10,T}$ is measured over periods of 15 minutes, and is used to describe the average maximum noise level.

The noise level, in decibels, exceeded for 90% of the measurement time period, when 'A' frequency weighted and 'F' time weighted is reference to as $L_{AF90,T}$. In most countries the $L_{AF90,T}$ is measured over periods of 15 minutes, and is used to describe the average minimum or background noise level.

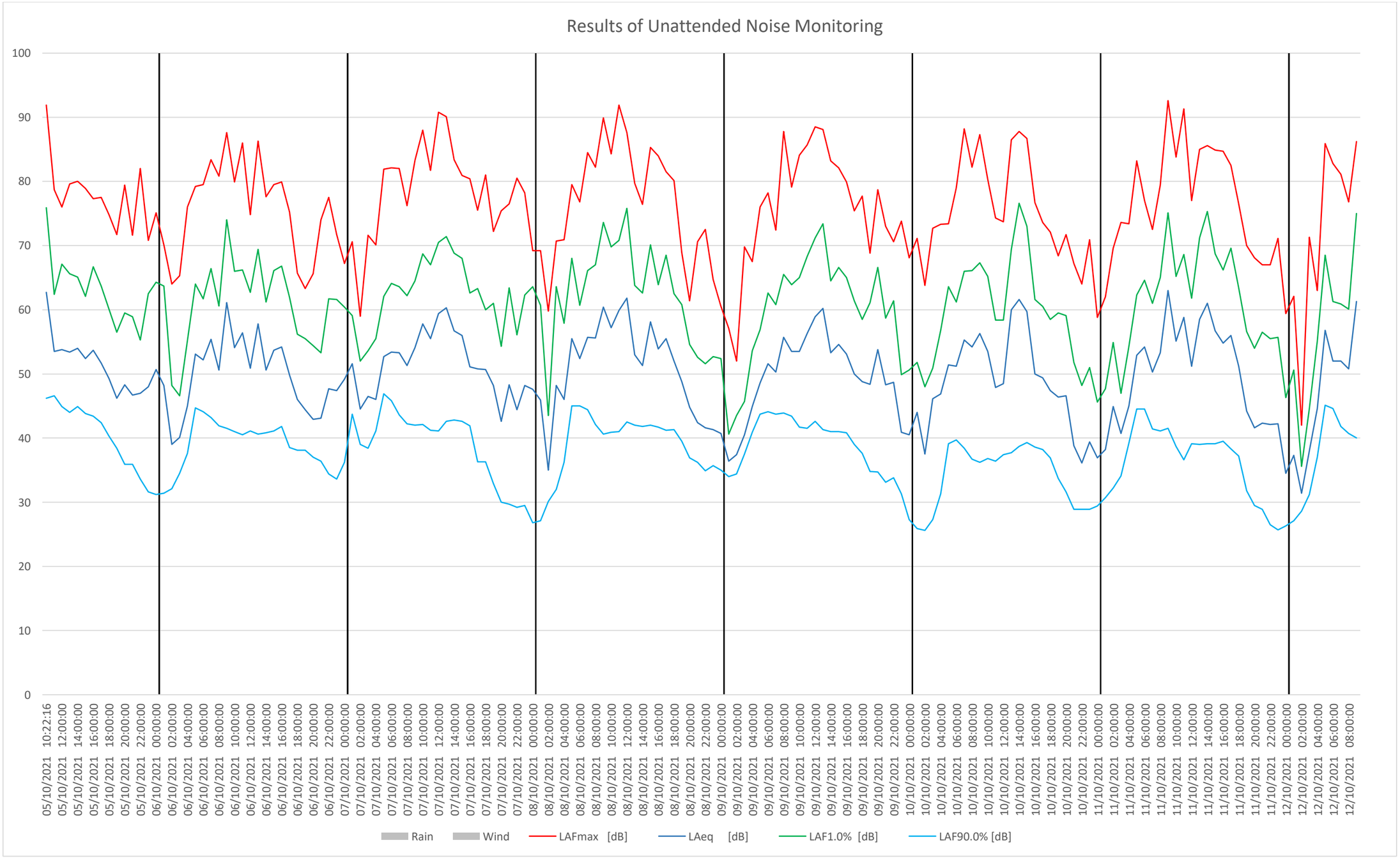
WEIGHTED SOUND REDUCTION INDEX, R_w

This is a single number rating of the airborne sound insulation of a wall, partition or ceiling. The sound reduction is normally measured over a frequency range of 100 Hz to 3.150 kHz and averaged in accordance with ISO standard weighting curves (Refer AS/NZS 1276.1:1999). Internal partition wall R_w+C ratings are frequency weighted to simulate insulation from human voice noise. The R_w+C is similar in value to the STC rating value. External walls, doors and windows may be R_w+C_{tr} rated to simulate insulation from road traffic noise. The spectrum adaptation term C_{tr} adjustment factor takes account of low frequency noise. The weighted sound reduction index is normally similar or slightly lower number than the STC rating value.

'Z' FREQUENCY WEIGHTING

The 'Z' (Zero) frequency weighting is 0 dB within the nominal 1/3 octave band frequency range centred on 10 Hz to 20 kHz. This is within the tolerance limits given in AS IEC 61672.1-2004: 'Electroacoustics - Sound level meters – Specifications'.

Appendix B: Noise Monitoring Chart


Results of Unattended Noise Monitoring
100
90
80
70
60
50
40
30
20
10
0
05/10/2021 10:22:16
05/10/2021 12:00:00
05/10/2021 14:00:00
05/10/2021 16:00:00
05/10/2021 18:00:00
05/10/2021 20:00:00
05/10/2021 22:00:00
06/10/2021 00:00:00
06/10/2021 02:00:00
06/10/2021 04:00:00
06/10/2021 06:00:00
06/10/2021 08:00:00
06/10/2021 10:00:00
06/10/2021 12:00:00
06/10/2021 14:00:00
06/10/2021 16:00:00
06/10/2021 18:00:00
06/10/2021 20:00:00
06/10/2021 22:00:00
07/10/2021 00:00:00
07/10/2021 02:00:00
07/10/2021 04:00:00
07/10/2021 06:00:00
07/10/2021 08:00:00
07/10/2021 10:00:00
07/10/2021 12:00:00
07/10/2021 14:00:00
07/10/2021 16:00:00
07/10/2021 18:00:00
07/10/2021 20:00:00
07/10/2021 22:00:00
08/10/2021 00:00:00
08/10/2021 02:00:00
08/10/2021 04:00:00
08/10/2021 06:00:00
08/10/2021 08:00:00
08/10/2021 10:00:00
08/10/2021 12:00:00
08/10/2021 14:00:00
08/10/2021 16:00:00
08/10/2021 18:00:00
08/10/2021 20:00:00
08/10/2021 22:00:00
09/10/2021 00:00:00
09/10/2021 02:00:00
09/10/2021 04:00:00
09/10/2021 06:00:00
09/10/2021 08:00:00
09/10/2021 10:00:00
09/10/2021 12:00:00
09/10/2021 14:00:00
09/10/2021 16:00:00
09/10/2021 18:00:00
09/10/2021 20:00:00
09/10/2021 22:00:00
10/10/2021 00:00:00
10/10/2021 02:00:00
10/10/2021 04:00:00
10/10/2021 06:00:00
10/10/2021 08:00:00
10/10/2021 10:00:00
10/10/2021 12:00:00
10/10/2021 14:00:00
10/10/2021 16:00:00
10/10/2021 18:00:00
10/10/2021 20:00:00
10/10/2021 22:00:00
11/10/2021 00:00:00
11/10/2021 02:00:00
11/10/2021 04:00:00
11/10/2021 06:00:00
11/10/2021 08:00:00
11/10/2021 10:00:00
11/10/2021 12:00:00
11/10/2021 14:00:00
11/10/2021 16:00:00
11/10/2021 18:00:00
11/10/2021 20:00:00
11/10/2021 22:00:00
12/10/2021 00:00:00
12/10/2021 02:00:00
12/10/2021 04:00:00
12/10/2021 06:00:00
12/10/2021 08:00:00
Rain
Wind
LAFmax [dB]
LAeq [dB]
LAF1.0% [dB]
LAF90.0% [dB]