



# Operational Noise Emission Assessment

## Extension of Operating Hours

257-257A Hector Road Bass Hill, NSW



Client:  
**Hector Street  
Convenience**  
C/o- Mr Rick Hanna

6 July 2026

|         |                                       |
|---------|---------------------------------------|
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## GLOSSARY

### NOISE

Noise is produced through rapid variations in air pressure at audible frequencies (20 Hz – 20 kHz). Most noise sources vary with time. The measurement of a variable noise source requires the ability to describe the sound over a particular duration of time. A series of industry standard statistical descriptors have been developed to describe variable noise, as outlined below.

### NOISE DESCRIPTORS

**L<sub>eq</sub>** – The sound pressure level averaged over the measurement period. It can be considered as the equivalent continuous steady-state sound pressure level, which would have the same total acoustic energy as the real fluctuating noise over the same time period.

**L<sub>Aeq(15min)</sub>** – The A-weighted average equivalent sound level over a 15-minute period.

**L<sub>A10</sub>** – The A-weighted noise level that has been exceeded for 10% of the measurement duration.

**L<sub>A90</sub>** – The A-weighted noise level that has been exceeded for 90% of the measurement duration. This descriptor is used to describe the background noise level.

**RBL** – Rating Background Level. The overall, single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period (as opposed to over each 24-hour period used for assessment background level). This is the level used for assessment purposes.

**dB** – Decibels. The fundamental unit of sound, a Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell. Probably the most common usage of the Decibel in reference to sound loudness is dB sound pressure level (SPL), referenced to the nominal threshold of human hearing. For sound in air and other gases, dB (SPL) is relative to 20 micropascals ( $\mu\text{Pa}$ ) =  $2 \times 10^{-5}$  Pa, the quietest sound a human can hear.

**R<sub>w</sub>** – Weighted Sound Reduction Index. A measure of sound insulation performance of a building element. The higher the number, the better the insulation performance.

### A-WEIGHTING

"A-weighting" refers to a prescribed amplitude versus frequency curve used to "weight" noise measurements to represent the frequency response of the human ear. Simply, the human ear is less sensitive to noise at some frequencies and more sensitive to noise at other frequencies. A-weighting is a method to present a measurement or calculation result with a number representing how humans subjectively hear different frequencies at different levels.

### NOISE CHARACTER, NOISE LEVEL AND ANNOYANCE

The perception of a given sound to be deemed annoying or acceptable is greatly influenced by the character of the sound and how it contrasts with the character of the background noise. A noise source may be measured to have only a marginal difference to the background noise level but may be perceived as annoying due to the character of the noise. Acoustic Dynamics' analysis of noise considers both the noise level and sound character in the assessment of annoyance and impact on amenity.

## 1 INTRODUCTION

### 1.1 EXECUTIVE SUMMARY

Acoustic Dynamics is engaged by **Mr Rick Hanna** on behalf of **Hector Street Convenience** to conduct an acoustic assessment of operational noise emission associated with the extension of operating hours of the existing supermarket located at 257 Hector St, Bass Hill, NSW.

This document provides an assessment of noise emission resulting from various noise sources associated with the operation of the proposed development at the potentially most affected sensitive receiver locations.

This assessment is prepared in accordance with the various acoustic requirements of:

- (a) Canterbury-Bankstown Council;
- (b) NSW Environment Protection Authority;
- (c) Association of Australasian Acoustical Consultants; and
- (d) Australian Standards.

### 1.2 PROJECT DESCRIPTION

The project site is located at 257 & 257a Hector Street Bass Hill, situated within a Local Centre (E1) land zone within the Canterbury Bankstown Council area of NSW. The site is bounded by commercial receivers to the north and south which are inactive during the night time period and residential receivers above, to the east and west. The nearest receivers include 257 & 257A Hector Street shop-top housing above, 255 Hector Street to the North, 56 Broad Street to the east, 259 Hector Street to the south and 264 Hector Street to the west.

The project proposal includes an extension of operating hours (currently approved 7:00am to 10:00pm) to run 24 hours a day, 7 days a week.

Various noise sources and operations associated with the proposal are predicted to include:

- Mechanical plant and equipment;
- Vehicle movements; and
- Staff and patron movements.

The project site, adjacent receivers and surrounding area are shown in the Location Map and Aerial Image presented within **Appendix A**.

### 1.3 SCOPE OF WORKS

Acoustic Dynamics has been engaged to provide an acoustic assessment suitable for submission to the relevant authorities.

The scope of the assessment is to include the following:

- Review local planning and development control instruments, state guidelines, federal legislation, standards and guidelines applicable to the proposal;
- Conduct unattended noise monitoring and operator-attended measurements at the development site to determine the existing noise environment and establish relevant noise criteria;
- Perform relevant calculations and noise modelling associated with the proposal to determine noise emission at nearby receiver locations; and
- Provide recommendations for design measures to be incorporated to achieve compliance with the relevant criteria and minimise potential noise impacts at nearby receiver locations.

## 2 ASSESSMENT CRITERIA AND STANDARDS

Acoustic Dynamics has reviewed local planning and development control instruments, government policies and legislation, standards and guidelines that are applicable to the proposal. The relevant sections of this review and the most stringent criteria applicable to this assessment are presented below.

### 2.1 LOCAL GOVERNMENT AND COUNCIL CRITERIA

#### 2.1.1 DEVELOPMENT CONSENT DA-607/2024

Acoustic Dynamics has reviewed Council's conditions of consent and the following conditions relevant to this assessment are included below:

***“33. Protection of Environment***

*The development must not cause offensive noise as defined by the Protection of the Environment Operation Act 1997. Following occupation, should complaints of a noise nuisance be received and substantiated by an Authorised Officer, an acoustic assessment shall be conducted by a qualified acoustic consultant and the resulting report shall be provided to Council for approval. Following approval the owner/occupier shall then implement all recommendations contained in the assessment report within a timeframe set by Council, to the satisfaction of Council and in compliance with any additional direction given by Council.*

*Condition reason: To protect and enhance the amenity of the occupants of the development site and the occupants of adjoining sites and to ensure compliance with the relevant New South Wales legislation.*

***34. Protection of Environment***

*Any activity carried out in accordance with this approval must not give rise to offensive odour, offensive noise or pollution of air, land or water as defined in the Protection of the Environment Operations Act 1997 and Regulations.*

*Condition reason: To protect and enhance the amenity of the occupants of the development site and the occupants of adjoining sites and to ensure compliance with the relevant New South Wales legislation.*

### **35. Protection of Environment**

*The operation of the development must not adversely affect the amenity of the neighbourhood or interfere unreasonably with the comfort or repose of a person who is outside the premises by reason of the emission or discharge of noise, fumes, vapour, odour, steam, soot, ash, dust, wastewater, waste products, grit, oil or other harmful products.*

*Condition reason: To protect and enhance the amenity of the occupants of the development site and the occupants of adjoining sites and to ensure compliance with the relevant New South Wales legislation.*

### **36. Commercial / Industrial activities**

*The consent holder shall ensure that all activities within the premises comply with the relevant sections of the Protection of the Environment Operations Act 1997 and Regulations and the NSW Environment Protection Authority Industrial Noise Policy (2000).*

*Condition reason: To protect and enhance the amenity of the occupants of the development site and the occupants of adjoining sites and to ensure compliance with the relevant New South Wales legislation.*

### **39. Acoustic Measures**

*Should a noise issue (relating to the development) not previously identified arise (through complaint or otherwise), the owner/occupier must, upon request by Council, employ the services of a suitably qualified acoustic consultant who has not previously been involved with the development to undertake a post-occupation assessment of the development and complete an acoustic report with recommendations to rectify the noise issue. A copy of this acoustic assessment report must be submitted to Council for approval and from there noise attenuation works must be implemented. Submission of the acoustic report must be within 30 days from the date requested by Council.*

**Note:** *Suitably Qualified Acoustic Consultant means a consultant who possesses the qualifications to render them eligible for membership of the Australian Acoustical Society, Institution of Engineers Australia or the Association of Australian Acoustical Consultants at the grade of member."*

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## **2.1.2 LOCAL PLANNING AND DEVELOPMENT CONTROL INSTRUMENTS**

Acoustic Dynamics has reviewed the relevant local planning and development control instruments, including the following documents:

- *Canterbury-Bankstown Local Environmental Plan 2023 (LEP); and*
- *Canterbury-Bankstown Development Control Plan 2023 (DCP).*

Acoustic Dynamics' review of the Canterbury-Bankstown LEP did not yield specific acoustic criteria or information relevant to this assessment.

Acoustic Dynamics' review of the Canterbury-Bankstown DCP indicated the following information relevant to this assessment:

*"Section 9-General Design and Amenity*

*Objectives*

*O9 To mitigate potential impacts between noise generating uses and dwellings in shop top housing and mixed use development"*

Council can enforce the requirements within the relevant local planning and development control instruments under the *Environmental Planning and Assessment Act of 1979*.

## 2.2 STATE GOVERNMENT POLICIES AND LEGISLATION

Acoustic Dynamics has conducted a review of the relevant state environmental planning policies, legislative acts and statutory instruments, including the following document:

- *Protection of the Environment Operations Act 1997*.

References to various acoustic requirements applicable to this assessment are summarised below.

### 2.2.1 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

The POEO Act provides generic regulatory instruments that can be applied to manage noise emission from a development site. Acoustic Dynamics advises that the operation of building services and other sources associated with the development not generate *"offensive noise"*, as defined within the Act:

***"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 is likely to be harmful to) a person who is outside the premises 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."*

## 2.3 NSW ENVIRONMENT PROTECTION AUTHORITY

Acoustic Dynamics has reviewed various assessment guidelines and criteria published by the NSW Environment Protection Authority (EPA), including the following documents:

- *Noise Policy for Industry 2017* (NPfI);
- *Road Noise Policy 2011* (RNP); and
- *Noise Guide for Local Government 2013* (NGLG).

References to applicable acoustic guidelines and requirements are summarised below.

### 2.3.1 NOISE POLICY FOR INDUSTRY 2017

The NPfI outlines and establishes noise criteria for industrial and other noise sources in various zoning areas. The following criteria have been applied for the assessment of noise emission associated with the use and operation of the development.

#### PROJECT INTRUSIVENESS NOISE LEVEL

The intrusiveness noise level is determined as follows:

|                                                                           |                                                                                                                                  |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b><math>L_{Aeq, 15min}</math> = rating background noise level + 5 dB</b> |                                                                                                                                  |
| where:                                                                    |                                                                                                                                  |
| <b><math>L_{Aeq, 15min}</math></b>                                        | represents the equivalent continuous (energy average) A-weighted sound pressure level of the source over 15 minutes.             |
| and                                                                       |                                                                                                                                  |
| <b>Rating background noise level</b>                                      | represents the background level to be used for assessment purposes, as determined by the method outlined in Fact Sheets A and B. |

#### PROJECT AMENITY NOISE LEVEL

The recommended amenity noise levels represent the objective for **total** industrial noise at a receiver location, whereas the **project amenity noise level** represents the objective for a noise from a **single** industrial development at a receiver location.

To ensure industrial noise levels (existing plus new) remain within the recommended amenity noise levels for an area, a project amenity noise level applies for each new source of industrial noise as follows:

**Project amenity noise level for industrial developments =  
recommended amenity noise level (Table 2.2) minus 5 dB(A)**

Acoustic Dynamics advises that achieving compliance with the NPfI's noise emission objectives applicable at the boundaries of the nearest sensitive receivers will adequately protect the acoustic amenity of these receivers.

## MODIFYING FACTOR CORRECTIONS

The NPfI also specifies noise emission level corrections that should be applied when a noise source is determined to include “*modifying factors*” that can vary the perceived intrusiveness of a noise source. Such modifying factors include tonal, low frequency, impulsive, or intermittent noise.

Detail on the relevant methodology for applying the various modifying factors is presented below, reproduced from Table C.1 of the NPfI.

**Table 2.2 NPfI Modifying Factor Adjustments**

| <b>Factor</b>      | <b>Assessment/<br/>Measurement</b>                                                                                                                              | <b>When To Apply</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Correction<sup>1,2</sup></b> |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <i>Tonal noise</i> | <i>One-third octave band analysis using the objective method for assessing the audibility of tones in noise – simplified method (ISO1996.2-2007 – Annex D).</i> | <i>Level of one-third octave band exceeds the level of the adjacent bands on both sides by:</i> <ul style="list-style-type: none"> <li>• 5 dB or more if the centre frequency of the band containing the tone is in the range 500–10,000 Hz</li> <li>• 8 dB or more if the centre frequency of the band containing the tone is in the range 160–400 Hz</li> <li>• 15 dB or more if the centre frequency of the band containing the tone is in the range 25–125 Hz.</li> </ul> | <i>5 dBA<sup>2,3</sup></i>      |

Note: 1) Corrections to be added to the measured or predicted levels, except in the case of duration where the adjustment is to be made to the criterion.

2) Where a source emits tonal and low-frequency noise, only one 5-dB correction should be applied if the tone is in the low-frequency range, that is, at or below 160 Hz.

### 2.3.2 ROAD NOISE POLICY 2011

The RNP document provides road traffic noise criteria for proposed roads as well as other developments with the potential to have an impact in relation to traffic noise generation.

The noise criteria applicable to the subject site is presented below.

**Table 2.3 Road Traffic Noise Assessment Criteria for Residential Land Uses**

| Road category | Type of project / land use                                                                                              | Assessment Criteria [dB]                  |                                           |
|---------------|-------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------|
|               |                                                                                                                         | Day (7am – 10pm)                          | Night (10pm – 7am)                        |
| Local roads   | 6. Existing residences affected by <b>additional traffic</b> on existing local roads generated by land use developments | $L_{Aeq, (1 \text{ hour})}$ 55 (external) | $L_{Aeq, (1 \text{ hour})}$ 50 (external) |

Accepted application of the Section 2.4 of the RNP is that where road traffic noise levels already exceed the assessment criteria, an increase of less than 2 dB represents a minor impact that is barely perceptible to the average person.

### 2.3.3 SLEEP DISTURBANCE CRITERION

Acoustic Dynamics advises that sleep disturbance is a complex issue, and the potential for sleep disturbance to occur depends on both the level of noise at a residential receiver, and the number of events that occur.

The NSW EPA has investigated overseas and Australian research on sleep disturbance. The assessment of noise for sleep disturbance relies on the application of a screening that indicates the potential for this to occur. The EPA's NGLG provides the following guidance for such a screening test:

*“Currently, there is no definitive guideline to indicate a noise level that causes sleep disturbance and more research is needed to better define this relationship. Where likely disturbance to sleep is being assessed, a screening test can be applied that indicates the potential for this to occur. For example, this could be where the subject noise exceeds the background noise level by more than 15 dB(A). The most appropriate descriptors for a source relating to sleep disturbance would be  $L_{A1(1 \text{ minute})}$  (the level exceeded for 1% of the specified time period of 1 minute) or  $L_{Amax}$  (the maximum level during the specified time period) with measurement outside the bedroom window.”*

Additionally, the guidelines of the NPfI provide the following additional information:

*“Where the subject development/premises night-time noise levels at a residential location exceed:*

- $L_{Aeq,15min}$  40 dB(A) or the prevailing RBL plus 5 dB, whichever is the greater; and/or*
- $L_{AFmax}$  52 dB(A) or the prevailing RBL plus 15 dB, whichever is greater”.*

Further to the above information, the following summarises the sleep disturbance criterion for external noise levels:

$$L_{Aeq,15min} \leq 40 \text{ dB or } L_{Aeq,15min} \leq (RBL + 5 \text{ dB}), \text{ whichever is greater}$$

**AND**

$$L_{Amax} \text{ or } L_{A1(1 \text{ minute})} \leq L_{A90} + 15 \text{ dB or } 52 \text{ dB(A)}, \text{ whichever is greater}$$

The RNP references other publications for consideration:

*“The World Health Organisation guidelines (WHO 1999) recommended that:*

***‘where noise is continuous, the equivalent sound pressure level should not exceed 30 dB(A) indoors, if negative effects on sleep are to be avoided’.***”

In addition to the above, the EPA has previously published the following additional information relating to findings of significant research carried out for sleep disturbance:

*“Maximum internal noise levels below 50-55 dBA are unlikely to cause awakening reactions... One or more noise events per night, with maximum internal noise levels of 65-70 dBA, are not likely to affect health and wellbeing significantly.”*

## 2.4 AUSTRALIAN STANDARDS

Acoustic Dynamics has conducted a review of relevant Australian Standards in relation to the acoustic design of the development, including the following standard:

- AS 2107:2016 “Acoustics – Recommended design sound levels and reverberation times for building interiors”.

References to various applicable acoustic standards are summarised below.

### 2.4.1 AS 2107:2016 “ACOUSTICS – RECOMMENDED DESIGN SOUND LEVELS AND REVERBERATION TIMES FOR BUILDING INTERIORS”

AS 2107 recommends satisfactory and maximum design sound levels for various types of occupancy within buildings. The following satisfactory and maximum design sound levels for the relevant types of occupancies and areas within the development are detailed.

**Table 2.3 Recommended Sound Levels for Different Areas of Occupancy (Extract from AS 2107 Table 1)**

| Item     | Type of occupancy / activity                                 | Design sound level ( $L_{Aeq,t}$ ) range |
|----------|--------------------------------------------------------------|------------------------------------------|
| <b>6</b> | <b>PUBLIC BUILDINGS</b>                                      |                                          |
|          | Restaurants and cafeterias—                                  |                                          |
|          | Cafeterias                                                   | 40 to 50                                 |
|          | Food courts                                                  | 45 to 55                                 |
|          | Coffee shops                                                 | 40 to 50                                 |
|          | Restaurants                                                  | 40 to 50                                 |
| <b>7</b> | <b>RESIDENTIAL BUILDINGS (see Note 5 and Clause 5.2)</b>     |                                          |
|          | Houses and apartments in suburban areas or near minor roads— |                                          |
|          | Apartment common areas (e.g. foyer, lift lobby)              | 45 to 50                                 |
|          | Living areas                                                 | 30 to 40                                 |
|          | Sleeping areas (night time)                                  | 30 to 35                                 |
|          | Work areas                                                   | 35 to 40                                 |

Acoustic Dynamics advises that any levels of airborne noise transmitted into various areas of the development, or adjacent areas of neighbouring developments should not exceed the relevant design sound levels presented above.

### 3 NOISE MEASUREMENT EQUIPMENT AND STANDARDS

All measurements were conducted in general accordance with AS 1055.1:2018 *Acoustics – Description and Measurement of Environmental Noise Part 1: General Procedures*. Sound measurements were carried out using precision sound level meters conforming to the requirements of IEC 61672.1:2002 *Electroacoustics: Sound Level Meters – Part 1: Specifications*. The instrumentation used during the survey is set out in **Table 3.1**.

**Table 3.1 Noise Survey Instrumentation**

| Type | Serial Number | Instrument Description                                  |
|------|---------------|---------------------------------------------------------|
| 2270 | 2664115       | Brüel & Kjaer Modular Precision Sound Level Meter       |
| 4189 | 2385698       | Brüel & Kjaer 12.5 mm Prepolarised Condenser Microphone |
| 4230 | 623588        | Brüel & Kjaer Acoustic Calibrator                       |
| XL2  | A2A-06816-E0  | NTI Audio XL2 Noise Logger                              |

The reference sound pressure level was checked prior to and after the measurements using the acoustic calibrator and remained within acceptable limits.

### 4 ASSESSMENT METHODOLOGY

Acoustic modelling was undertaken using noise modelling software (*CadnaA Version 2026*) to predict operational noise levels generated by the development. CadnaA calculates environmental noise propagation according to the applicable international and ISO standards, including the ISO 9613 algorithm.

Within our calculations and acoustic modelling, noise emission contributions from the development have been considered taking the following factors into account:

- Airborne noise losses due to distance and ground topography;
- Losses due to direction and diffraction;
- Increases due to reflections; and
- Acoustic shielding.

#### 4.1 PROJECT CRITERIA

To establish the acoustic environment at the subject site in accordance with the criteria outlined in **Section 2**, unattended noise monitoring was conducted between 1 June 2026 and 5 June 2026. The noise logger was shielded from direct noise associated with vehicular traffic or mechanical plant associated with the development.

Acoustic Dynamics advises the measurement location is representative of the existing noise environment of the nearest sensitive receivers. The measurement location is shown within **Appendix A**. Results from the long-term noise monitoring are presented in **Appendix B**.

Following the general procedures outlined in **Section 2**, a summary of the established noise environment and project noise objectives at the nearest residential receivers is presented below.

**Table 4.1 Measured External Noise Levels and Project Noise Objectives – Residential Receivers**

| Location                      | Assessment Period                 | L <sub>A90</sub> Rating Background Noise Level (RBL) [dB] | Measured L <sub>Aeq</sub> Noise Level [dB] | Project Intrusiveness Noise Level L <sub>Aeq,15min</sub> [dB] | Project Amenity Noise Level L <sub>Aeq,15min</sub> [dB] <sup>2</sup> | Project Noise Trigger Level L <sub>Aeq,15min</sub> [dB] |
|-------------------------------|-----------------------------------|-----------------------------------------------------------|--------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------|
| Nearest Residential Receivers | Day (7am <sup>1</sup> to 6pm)     | 42                                                        | 51                                         | 47                                                            | 53                                                                   | 47                                                      |
|                               | Evening (6pm to 10pm)             | 41                                                        | 46                                         | 46                                                            | 43                                                                   | 43                                                      |
|                               | Night (10pm to 7am <sup>1</sup> ) | 34                                                        | 46                                         | 39                                                            | 38                                                                   | 38 <sup>3</sup>                                         |

- Note:
- 1) 8:00am on Sundays and public holidays.
  - 2) Amenity adjustment based on “Suburban” residential receiver type (NPfI Table 2.2). The noise emission objective has been modified in accordance with the recommendations detailed within the NPfI Section 2.2, for time standardisation of the intrusiveness and amenity noise levels (L<sub>Aeq,15min</sub> will be taken to be equal to the L<sub>Aeq, period</sub> + 3 dB).
  - 3) Project Noise Trigger Level is the lowest value of Project Intrusiveness of Project Amenity Noise Level after conversion to the L<sub>Aeq</sub> equivalent value.

In accordance with the NGLG and NPfI guidelines detailed above, the following sleep disturbance screening criterion for external noise emission has been applied for this project:

|                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>External Sleep Disturbance Criteria:</b></p> <p>L<sub>Aeq,15min</sub> ≤ 39 dB</p> <p><b>AND</b></p> <p>L<sub>Amax</sub> or L<sub>A1</sub>(1 minute) ≤ 53 dB</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

In accordance with the NGLG and NPfI guidelines detailed above, the following sleep disturbance screening criterion for noise sources measured internally has been applied for this project:

|                                                                                         |
|-----------------------------------------------------------------------------------------|
| <p><b>Internal Sleep Disturbance Criteria:</b></p> <p>L<sub>Aeq,15min</sub> ≤ 30 dB</p> |
|-----------------------------------------------------------------------------------------|

## 4.2 OPERATIONAL ASSUMPTIONS

The following assumptions were made regarding the noise model configuration:

1. The development is constructed as follows:
  - Floor is a solid concrete slab;
  - External walls are of double-brick construction, lined internally with plasterboard;
  - Roof is of sheet metal construction, lined internally with plasterboard;
2. The development will operate during the night time period;
3. Mechanical plant will service the development during the night time period;
4. 2 x staff members may arrive or leave within any given 15-minute period; and
5. Vehicles will park on Hector Street or in the parking to the north of the development. During the night time period it is assumed that the majority of patrons will park in front of the supermarket.

## 4.3 NOISE SOURCES

Acoustic Dynamics has established and assessed the following noise sources and operations associated with the development. Acoustic Dynamics noted that there are other condenser units on site but was advised by the owner that they service the residential units above.

The noise data presented in **Table 4.1** has been established based on information provided by the proponent, short-term measurements and inspections conducted on-site, or referenced from our database of nearfield measurements at similar developments.

**Table 4.1 Associated Noise Sources and Operations**

| Source                                   | Quantity | Sound Power Level $L_w$ [dBA] |
|------------------------------------------|----------|-------------------------------|
| <b>Development Operations</b>            |          |                               |
| Noise from internal operations           | 2        | 66                            |
| <b>Patron Movements</b>                  |          |                               |
| Two patrons, walking at a speed of 5km/h | 20 / hr  | 61                            |
| <b>Mechanical Equipment</b>              |          |                               |
| Refrigeration Plant                      | 1        | 80 <sup>1</sup>               |
| Compressor                               | 1        | 80 <sup>1</sup>               |
| Power inverter equipment                 | 1        | 70                            |
| <b>Vehicle Movements</b>                 |          |                               |
| Staff car, driving at a speed of 5km/h   | 4 / hr   | 81                            |
| Patron car, driving at a speed of 5km/h  | 20 / hr  | 81                            |

Note: 1) Includes a 5 dB modifying factor correction for noise character, in accordance with the requirements of the NPfI's Table C1 (refer to **Section 2.2**).

## 4.4 RECEIVERS

The cumulative noise impact has been assessed to the potentially most affected point at the adjacent sensitive receiver properties and presented in **Table 4.2** below.

**Table 4.2 Nearest Sensitive Receiver Locations**

| Source                       | Location       | Direction |
|------------------------------|----------------|-----------|
| <b>Residential Receivers</b> |                |           |
| <b>R<sub>1</sub></b>         | 257 Hector St  | Above     |
| <b>R<sub>2</sub></b>         | 257A Hector St | Above     |
| <b>R<sub>3</sub></b>         | 253 Hector St  | North     |
| <b>R<sub>4</sub></b>         | 56 Broad St    | East      |
| <b>R<sub>5</sub></b>         | 259 Hector St  | South     |
| <b>R<sub>6</sub></b>         | 264 Hector St  | West      |

Acoustic Dynamics advises that by achieving compliance with the nearest sensitive receiver locations, compliance will also be achieved at all other sensitive receiver locations further away.

## 5 OPERATIONAL NOISE EMISSION ASSESSMENT

The calculated maximum noise emission levels at the nearest receiver locations against the relevant criteria are presented below. It is advised that by achieving compliance with the nearest sensitive receiver locations, compliance will also be achieved at all other receiver locations.

The assessment location for **external noise emission** is defined as the most affected point on or within any sensitive receiver property boundary. Examples of this location may be:

- 1.5m above ground level;
- On a balcony at 1.5m above floor level; and
- Outside a window on the ground or higher floors, at a height of 300mm below the head of the window.

The assessment location for **internal noise emission** is defined as the most affected point within the nearest room of any sensitive receiver property, assuming windows are closed.

### 5.1 EXTERNAL NOISE EMISSION

The calculated maximum **external** noise emission levels at the nearest receiver locations are presented against the relevant noise emission criteria below.

Acoustic Dynamics has modelled the operations of the supermarket, assuming a **worst-case 15-minute scenario**, which includes the following operations:

- Mechanical Plant operating at 100% capacity for the full duration of the assessment;
- 6 vehicle movements during any 15-minute period;
- 6 staff or patrons arriving at the supermarket; and
- Noise from the internal operation of the supermarket, based on measurements taken during the daytime period. The noise emission from the internal operations of the supermarket is expected to be lower during the night-time period.

**Table 5.3 Calculated External Noise Emission Levels & Relevant Noise Criteria (Night Period Operation)**

| Receiver             | Assessment Period                          | Noise Source <sup>1</sup> | Maximum<br>L <sub>Aeq</sub> (1hr/15min)<br>Noise<br>Emission<br>Level [dB] <sup>2,3</sup> | Noise<br>Emission<br>L <sub>Aeq</sub><br>Criterion<br>[dB] | Complies<br>?          |
|----------------------|--------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------|------------------------|
| <b>R<sub>1</sub></b> | Night<br>(10:00pm to 7:00am <sup>5</sup> ) | Development Operations    | 17                                                                                        | <b>38</b>                                                  | <b>Yes<sup>4</sup></b> |
|                      |                                            | Mechanical Plant          | 40                                                                                        |                                                            |                        |
|                      |                                            | Patron Movements          | 20                                                                                        |                                                            |                        |
|                      |                                            | Vehicle Movements         | 25                                                                                        |                                                            |                        |
|                      |                                            | <b>Cumulative Total</b>   | <b>40<sup>4</sup></b>                                                                     |                                                            |                        |
| <b>R<sub>2</sub></b> | Night<br>(10:00pm to 7:00am <sup>5</sup> ) | Development Operations    | 17                                                                                        | <b>38</b>                                                  | <b>Yes<sup>4</sup></b> |
|                      |                                            | Mechanical Plant          | 39                                                                                        |                                                            |                        |
|                      |                                            | Patron Movements          | 19                                                                                        |                                                            |                        |
|                      |                                            | Vehicle Movements         | 25                                                                                        |                                                            |                        |
|                      |                                            | <b>Cumulative Total</b>   | <b>39<sup>4</sup></b>                                                                     |                                                            |                        |
| <b>R<sub>3</sub></b> | Night<br>(10:00pm to 7:00am <sup>5</sup> ) | Development Operations    | 0                                                                                         | <b>38</b>                                                  | <b>Yes</b>             |
|                      |                                            | Mechanical Plant          | 12                                                                                        |                                                            |                        |
|                      |                                            | Patron Movements          | 18                                                                                        |                                                            |                        |
|                      |                                            | Vehicle Movements         | 28                                                                                        |                                                            |                        |
|                      |                                            | <b>Cumulative Total</b>   | <b>28</b>                                                                                 |                                                            |                        |
| <b>R<sub>4</sub></b> | Night<br>(10:00pm to 7:00am <sup>5</sup> ) | Development Operations    | 0                                                                                         | <b>38</b>                                                  | <b>Yes</b>             |
|                      |                                            | Mechanical Plant          | 20                                                                                        |                                                            |                        |
|                      |                                            | Patron Movements          | 15                                                                                        |                                                            |                        |
|                      |                                            | Vehicle Movements         | 33                                                                                        |                                                            |                        |
|                      |                                            | <b>Cumulative Total</b>   | <b>33</b>                                                                                 |                                                            |                        |
| <b>R<sub>5</sub></b> | Night<br>(10:00pm to 7:00am <sup>5</sup> ) | Development Operations    | 0                                                                                         | <b>38</b>                                                  | <b>Yes</b>             |
|                      |                                            | Mechanical Plant          | 11                                                                                        |                                                            |                        |
|                      |                                            | Patron Movements          | 20                                                                                        |                                                            |                        |
|                      |                                            | Vehicle Movements         | 35                                                                                        |                                                            |                        |
|                      |                                            | <b>Cumulative Total</b>   | <b>35</b>                                                                                 |                                                            |                        |

| Receiver       | Assessment Period                             | Noise Source <sup>1</sup> | Maximum<br>L <sub>Aeq</sub> (1hr/15min)<br>Noise<br>Emission<br>Level [dB] <sup>2,3</sup> | Noise<br>Emission<br>L <sub>Aeq</sub><br>Criterion<br>[dB] | Complies<br>? |
|----------------|-----------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------|
| R <sub>6</sub> | Night<br>(10:00pm to<br>7:00am <sup>5</sup> ) | Development Operations    | 5                                                                                         | 38                                                         | Yes           |
|                |                                               | Mechanical Plant          | 2                                                                                         |                                                            |               |
|                |                                               | Patron Movements          | 19                                                                                        |                                                            |               |
|                |                                               | Vehicle Movements         | 33                                                                                        |                                                            |               |
|                |                                               | <b>Cumulative Total</b>   | <b>34</b>                                                                                 |                                                            |               |

- Note:
- 1) Scenario operations and noise sources are detailed in **Section 4**.
  - 2) Acoustic Dynamics assumes noise sources will operate continuously over the assessment period.
  - 3) Includes the benefits of recommendations outlined in **Section 7**.
  - 4) As per Table 4.1 and Table 4.2 of the Noise Policy for Industry, marginal compliance is achieved as differences of 1-2 points are considered negligible, and are generally not easily discernible by the human ear.
  - 5) 8:00am on weekends and public holidays.

Acoustic Dynamics advises the calculated **external** noise emission levels are conservatively based on **maximum capacity** operations at the development. Acoustic Dynamics advises that such a scenario is unlikely to occur and noise levels are likely to be below those calculated for the majority of the time.

## 5.2 INTERNAL NOISE EMISSION

The calculated maximum **internal** noise emission levels at the nearest receiver locations are presented against the relevant noise emission criteria below.

**Table 5.4 Calculated Internal Noise Emission Levels to Adjacent Areas of Occupancy & Relevant Criteria**

| Receiver Location | Assessment Period                            | Noise Source                                       | Maximum<br>Cumulative<br>L <sub>Aeq</sub> (15min) Noise<br>Level [dB] <sup>3,4</sup> | AS2107<br>L <sub>Aeq</sub> (15min)<br>Criterion<br>[dB] | Complies? |
|-------------------|----------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------|-----------|
| R <sub>1</sub>    | Night<br>(10:00pm to<br>7:00am) <sup>1</sup> | Combined<br>Development<br>Operations <sup>2</sup> | 25                                                                                   | < 35                                                    | Yes       |
| R <sub>2</sub>    |                                              |                                                    | 25                                                                                   | < 35                                                    | Yes       |

- Note:
- 1) Compliance with this most sensitive assessment period criterion ensures compliance during all other less stringent assessment periods.
  - 2) Combined maximum cumulative development operations assume an internal reverberant sound pressure level of L<sub>Aeq</sub>(15min) ≤ 65 dB, which is based on site measurements conducted during the day-time period. Actual noise levels during the night-time period are expected to be considerably lower.
  - 3) Denotes predicted maximum noise level from the development inclusive of the measured sound transmission loss for the shared partitions.
  - 4) Includes the benefits of recommendations outlined in **Section 7**.

### 5.3 ROAD TRAFFIC NOISE

Acoustic Dynamics understands that patrons and staff who drive will access the development via surrounding local roads. Vehicles utilising local roads are assessed in consideration of the NSW EPA's RNP criteria outlined in **Section 2**.

The calculated maximum noise emission levels at the nearest residential receivers, due to the vehicles utilising surrounding local roads, are presented below. Acoustic Dynamics advises that by achieving compliance with the nearest sensitive receiver locations, compliance will also be achieved at all other sensitive receiver locations further away.

**Table 5.5 Calculated Road Traffic Noise Emission Levels & Relevant Noise Criteria**

| Sensitive Receiver                        | Predicted Maximum $L_{eq,1hr}$ Sound Pressure Level [dB] <sup>1</sup> | Relevant $L_{Aeq,1hr}$ Criterion [dB] <sup>2,3</sup> | Complies? |
|-------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------|-----------|
| Residential receivers along Hector Street | 37                                                                    | 50                                                   | Yes       |

Note: 1) Predicted  $L_{Aeq}$  noise level is the maximum noise level measured within a 1-hour period.  
 2) Measured noise level within a 1-hour period during the night-time assessment period (10:00pm until 7:00am on weekdays, or 8:00am on weekends and public holidays).  
 3) Compliance with this most sensitive assessment period criterion ensures compliance during all other less stringent assessment periods.

### 5.4 SLEEP DISTURBANCE

Acoustic Dynamics has determined the potential maximum  $L_{Amax}$  **external** noise emission level from the development resulting from a car door slamming, when measured at the nearest residential receivers during the night-time assessment period.

**Table 5.6 Calculated Maximum Instantaneous External Noise Levels & Relevant Noise Criteria**

| Sensitive Receiver                        | Source            | Predicted Maximum $L_{Amax}$ Sound Pressure Level [dB] | $L_{Amax}$ Sleep Disturbance Criterion [dB] | Complies? |
|-------------------------------------------|-------------------|--------------------------------------------------------|---------------------------------------------|-----------|
| Residential Receivers along Hector Street | Car Door Slamming | 49                                                     | 52                                          | Yes       |

## 6 DISCUSSION

The calculations indicate the following:

- Noise emission resulting from the proposal is **predicted to comply** with the relevant acoustic criteria of Canterbury Bankstown Council, the NSW EPA and government legislation during the proposed hours of operation when assessed at the nearest sensitive receivers;

2. Noise emission associated with additional traffic on surrounding local roads is **predicted to comply** with the NSW EPA when assessed at the nearest sensitive receivers;
3. Following implementation of the noise controls, mechanical plant noise is expected to be reduced considerably from existing. This will also have the benefit of reducing mechanical noise levels during the day and evening operating periods;
4. Maximum instantaneous external noise events are **predicted to comply** with the NSW EPA's guidelines on sleep disturbance when assessed at the nearest sensitive receivers;
5. There is **low risk** of acoustic disturbance to the nearest sensitive receivers during the proposed hours of operation;
6. To ensure the assessment is conducted in a conservative manner, noise emission has been assessed as a **worst-case** scenario (i.e. all noise generating activities and noise sources occurring simultaneously and at maximum capacity). Generally, noise emission associated with the proposal is **predicted to be lower** than the calculations presented.

## 7 RECOMMENDATIONS AND DESIGN ADVICE

The following recommendations are provided to ensure noise associated with the proposal is adequately managed and minimised.

### 7.1 BEST MANAGEMENT PRACTICE AND NOISE MANAGEMENT PLAN

Acoustic Dynamics recommends the adoption of a management plan incorporating best management practice procedures to protect the acoustic amenity of the surrounding area. Such a management plan should outline policies and procedures to ensure noise emission from the development are kept to a minimum, including:

1. Noise induction of all site staff, including the explanation of noise control and a discussion of project specific reduction strategies, For example:
  - No unnecessary moving or loading of stock during the night time period;
  - Exercising care when undertaking restocking activities during the night time period;
  - No emptying bins during the night time period;
  - No compacting waste/recycling during the night time period;
2. Deliveries must be received during day-time operational hours only;
3. Where feasible, consider reducing operations at night by:
  - Reducing the operational capacity of mechanical equipment;
  - Scheduling the use of noisy equipment to the least-sensitive time of day; or
  - Schedule noisy pieces of equipment such that they are used separately rather than concurrently;

4. Consider the placement of noisy equipment:
  - Position equipment behind structures that act as barriers;
  - Locate equipment at the greatest distance from noise sensitive areas; or
  - Orient equipment such that noise emission is directed away from noise sensitive areas.
5. Ensure external doors are closed during the night period to contain noise within the development;
6. Mechanical equipment should be regularly maintained and serviced to maintain low mechanical noise emission levels;
7. Cash registers should be closed quietly and where possible seals made of rubber should be retrofitted to prevent slamming them shut;
8. The motion sensor activated entrance tone should be reduced in volume during the night time period by a minimum of 20 dB(A);
9. Staff and patrons should leave the premises quietly and respectfully to minimise any potential impacts on the surrounding amenity, including signage reminding staff and patrons to be aware of their neighbours and to leave in a respectful manner; and
10. Implementation of an appropriate community liaison procedure, including a noise and vibration complaint procedure and means of ongoing communication with nearby potentially affected receivers once development operations begin.

## 7.2 ACOUSTIC BARRIER

Acoustic Dynamics advises an acoustic barrier is required to mitigate noise transmission from the development to the nearest receivers. The effectiveness of an acoustic barrier is determined by its height, constructed materials and density.

The acoustic barrier must meet the following specifications:

1. The acoustic barrier must provide a minimum surface density of **15 kg/m<sup>2</sup>** and contain **no gaps** along the surface. All gaps are to be adequately sealed using a flexible mastic sealant. Acoustic Dynamics advises that the acoustic barrier could be constructed to be:
  - A double layer Colorbond™ (or equivalent) construction;
  - Masonry (brick or concrete) construction;
  - A minimum 9mm thick compressed fibre-cement sheeting on a timber or steel stud; or
  - Other suitable material (minimum surface density of **15 kg/m<sup>2</sup>**) such as Perspex or equivalent;
2. The acoustic barrier must replace or supplement the current tunnel that extends on the northern side of 257 Hector Street from the western side of the tunnel and must extend until 0.5m past the existing inverters and nearby plant as shown in **Appendix A**;

3. The acoustic barrier must replace the top 1.5m of the existing structure;
4. There must be no gaps between the barrier and the adjacent masonry facade wall (i.e. well-sealed with a flexible mastic sealant; and
5. The acoustic barrier must be lined internally (side facing mechanical units) with a suitably weather resistant and durable outdoor acoustic absorption material (such as Stratocell Whisper™ or equivalent).

**Note:** Acoustic Dynamics offers to undertake a review of the barrier design and material prior to installation to ensure adequate attenuation will be achieved.

### 7.3 REFRIGERATION PLANT

Acoustic Dynamics advises that the refrigeration condenser located in the rear of 257A Hector St needs to have the following recommendations incorporated to reduce the noise impact on nearby receivers:

1. Our measurements reveal that the noise being emitted is tonal, likely resulting from the fan bearings being worn or damaged, as such Acoustic Dynamics recommends that the plant be serviced to ensure it is operating at the quietest operating level;
2. Additionally, the noise contains a mechanical hum, that could be caused by loose parts, inadequate vibration isolation from the ground, or other defects in the mechanical plant;
3. The refrigeration condenser will need to incorporate an acoustic enclosure over the unit to reduce the total output by 20 dB(A). A suitable design could be constructed with Fantech SBL1 Louvres (or louvre with equivalent acoustic performance as seen in Table 7.3 below) and a 15 kg/m<sup>3</sup> roof fully enclosing the unit. A diagram showing the design can be found in **Appendix A**; and

**Table 7.3 Fantech SBL1 Noise Reduction**

| Acoustic Louvre | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | O/A |
|-----------------|----|-----|-----|-----|------|------|------|------|-----|
| Fantech SBL1    | 10 | 13  | 15  | 19  | 20   | 18   | 18   | 14   | 17  |

4. The design of the enclosure should be confirmed by a suitably qualified mechanical contractor to ensure it meets the airflow requirements of the unit.

## 7.4 EXISTING COMPRESSOR

1. Acoustic Dynamics recommends the existing compressor located at the western side of the tunnel be enclosed in an acoustic enclosure constructed using materials that have a surface density equal to 15 kg/m<sup>2</sup>; or
2. Enclosed with a mass loaded vinyl shroud (e.g. double wrapped 8kg/m<sup>2</sup> Wavebar, or equivalent on a support frame); or
3. If the compressor cannot be housed in an enclosure or shroud, Acoustic Dynamics recommends replacing the compressor with a quieter model with a maximum sound power level **≤ 65 dB(A)** following any modifying factors for tonality in accordance with the Noise Policy for Industry Table C1; and
4. The existing opening for airflow will need to be sealed and can be located at either the bottom of the fence or at a distance of 5 meters from the compressor and should not be located within 1m of the existing inverters.

## 7.5 BUILDING MATERIAL CERTIFICATION

Acoustic Dynamics advises that all building materials specified must be tested and certified by a locally recognised and accepted testing agency in respect of their intended use. Where appropriate, materials and noise mitigation measures specified by Acoustic Dynamics must be certified by a locally recognised (qualified) and accepted professional for suitability (structural, wind loading, or other) for the intended use.

## 8 CONCLUSION

Acoustic Dynamics has conducted an acoustic assessment of the proposed extension of operating hours associated with the supermarket located at 257-257A Hector Street, Bass Hill, NSW.

A review of the applicable local policies and standards was conducted. Noise levels were assessed in accordance with the requirements of:

- (a) Canterbury-Bankstown Council;
- (b) NSW Environment Protection Authority;
- (c) Association of Australasian Acoustical Consultants; and
- (d) Australian Standards.

The assessment predicted noise impacts at nearby sensitive receiver locations. Noise modelling was conducted using assumed **worst-case** operational scenarios in **Section 5**. Recommendations are provided in **Section 7** detailing best management practices and design strategies minimise the impacts on the surrounding acoustic environment.

### **Acoustic Opinion**

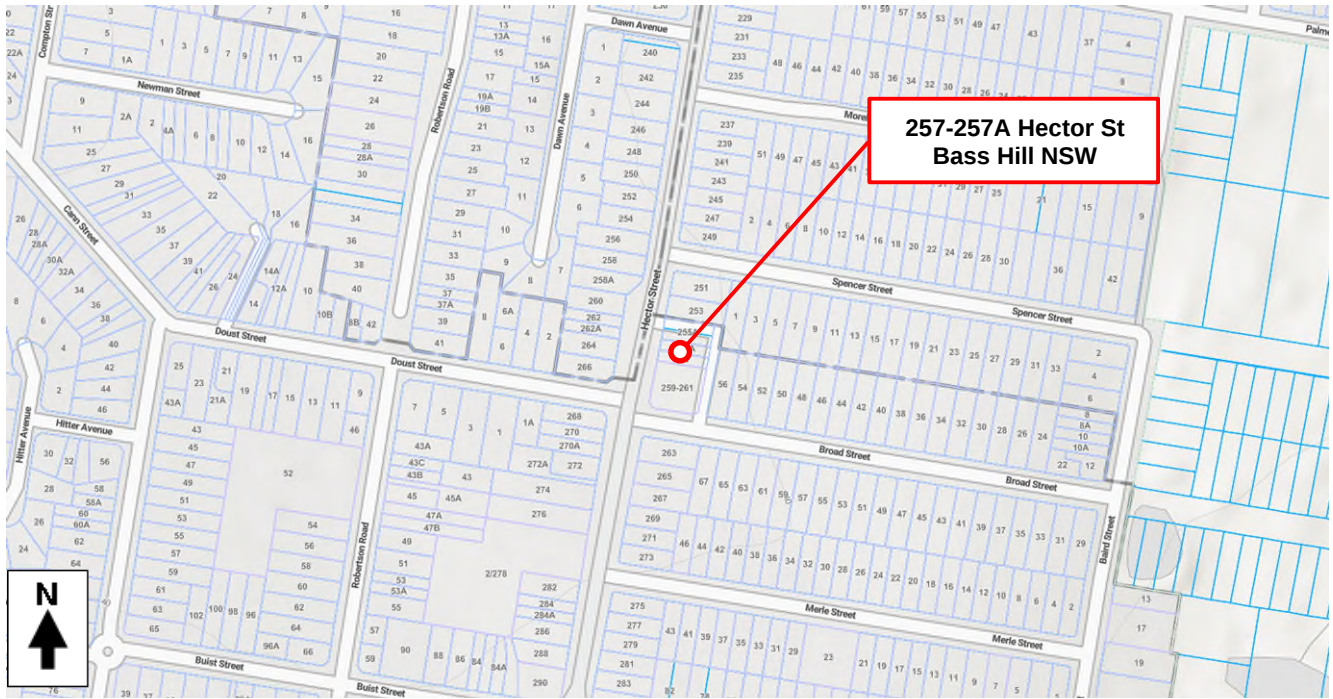
Further to our site survey, noise monitoring and measurements, our review of the relevant acoustic criteria and requirements, and our calculations, Acoustic Dynamics advises that the proposal can be designed to comply with the relevant acoustic criteria of Canterbury-Bankstown Council, the NSW POEO Act 1997 and the NSW EPA, with the incorporation of our recommendations detailed within this report.

It is our opinion that the acoustic risks associated with the proposal can be adequately controlled and the amenity of neighbouring properties and residents can be satisfactorily protected.

We trust that the above information meets with your present requirements and expectations. Please do not hesitate to contact us on 02 9908 1270 should you require more information.

## APPENDIX A — LOCATION MAP, AERIAL IMAGE AND DRAWINGS

### A.1 LOCATION MAP (COURTESY OF SIX MAPS)



### A.2 AERIAL IMAGE (COURTESY OF SIX MAPS)

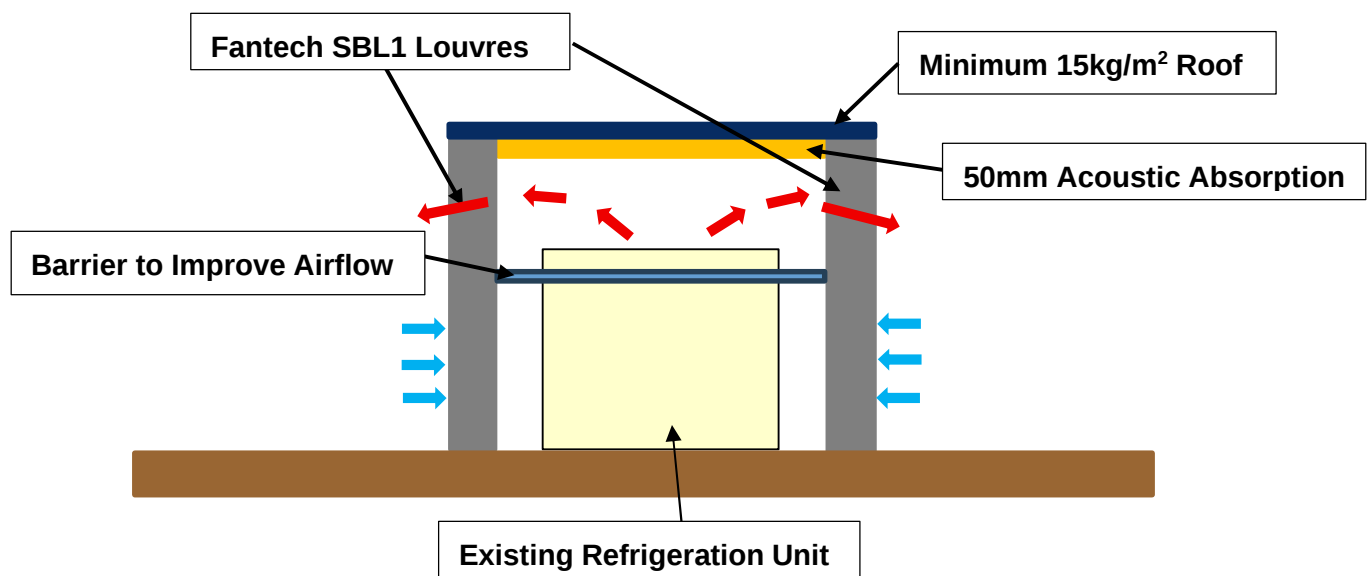


## A.3 DRAWINGS

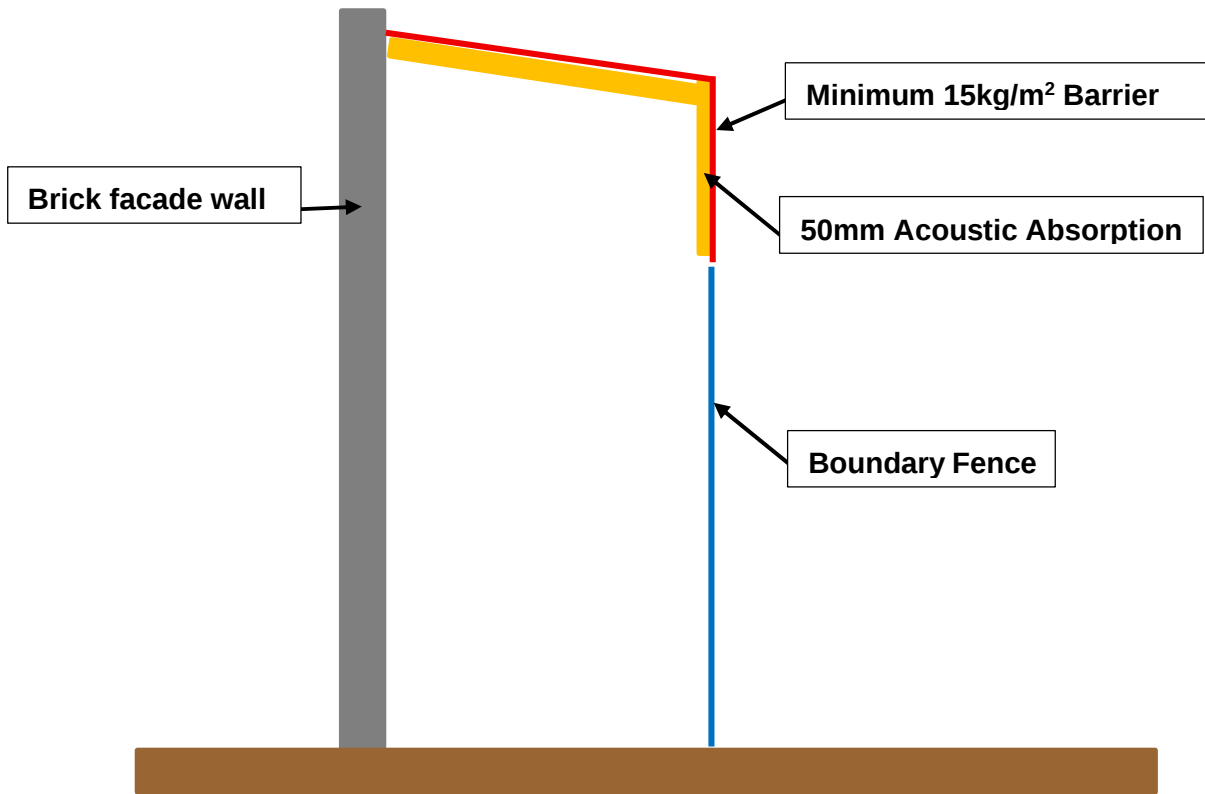
### A.4.1 PROPOSED BARRIER DRAWING – TOP VIEW



### A.4.2 PROPOSED REFRIGERATION PLANT ENCLOSURE DRAWING

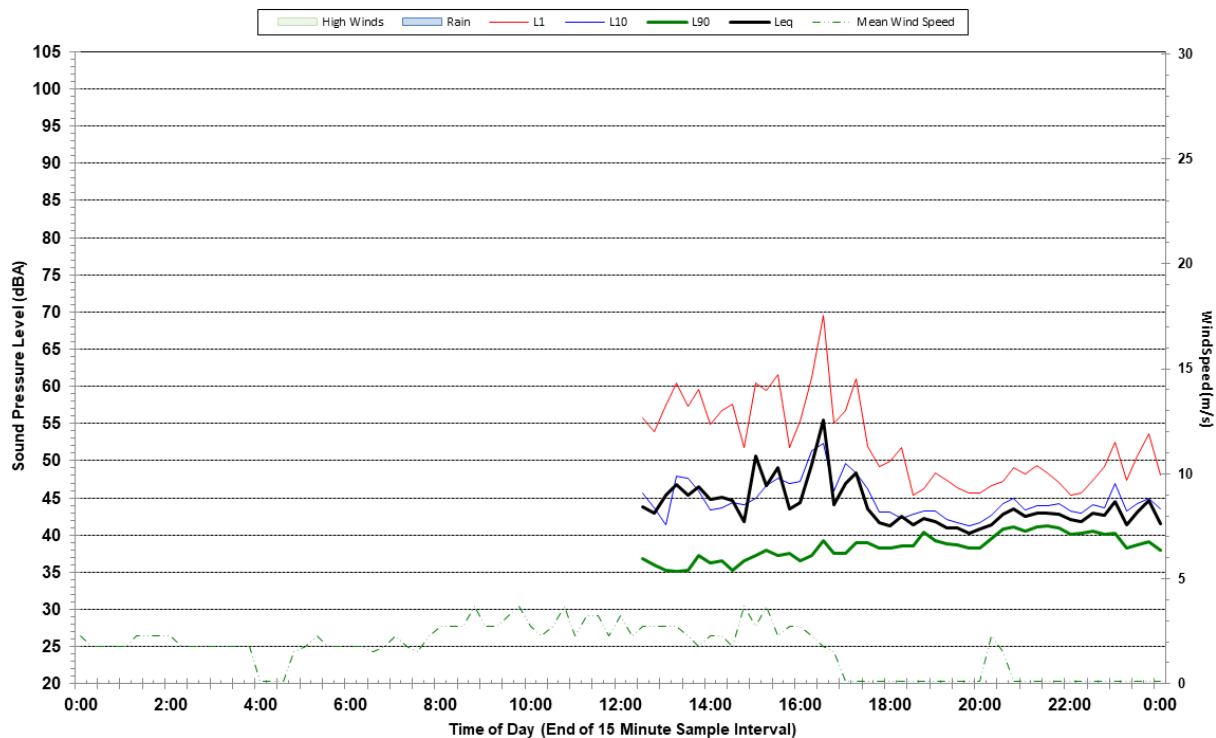


#### A.4.2 PROPOSED BARRIER DRAWING – SIDE VIEW

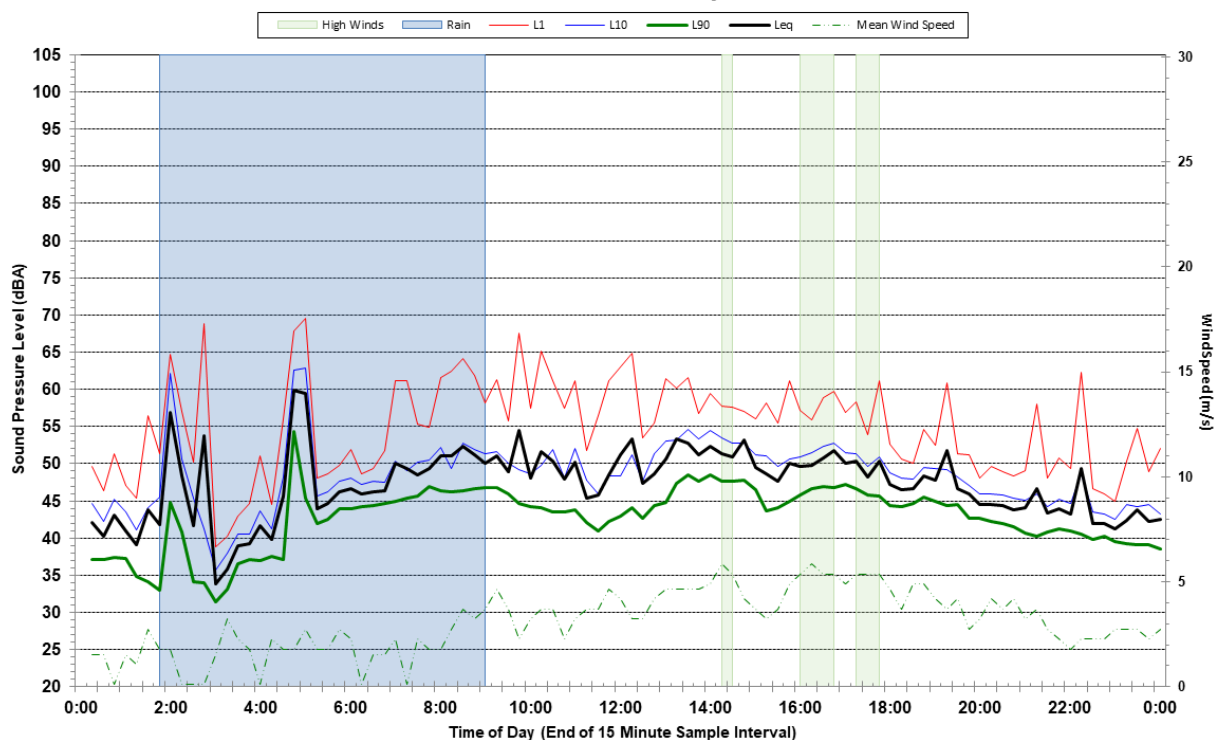


## APPENDIX B — UNATTENDED NOISE MONITORING STATISTICAL GRAPHS

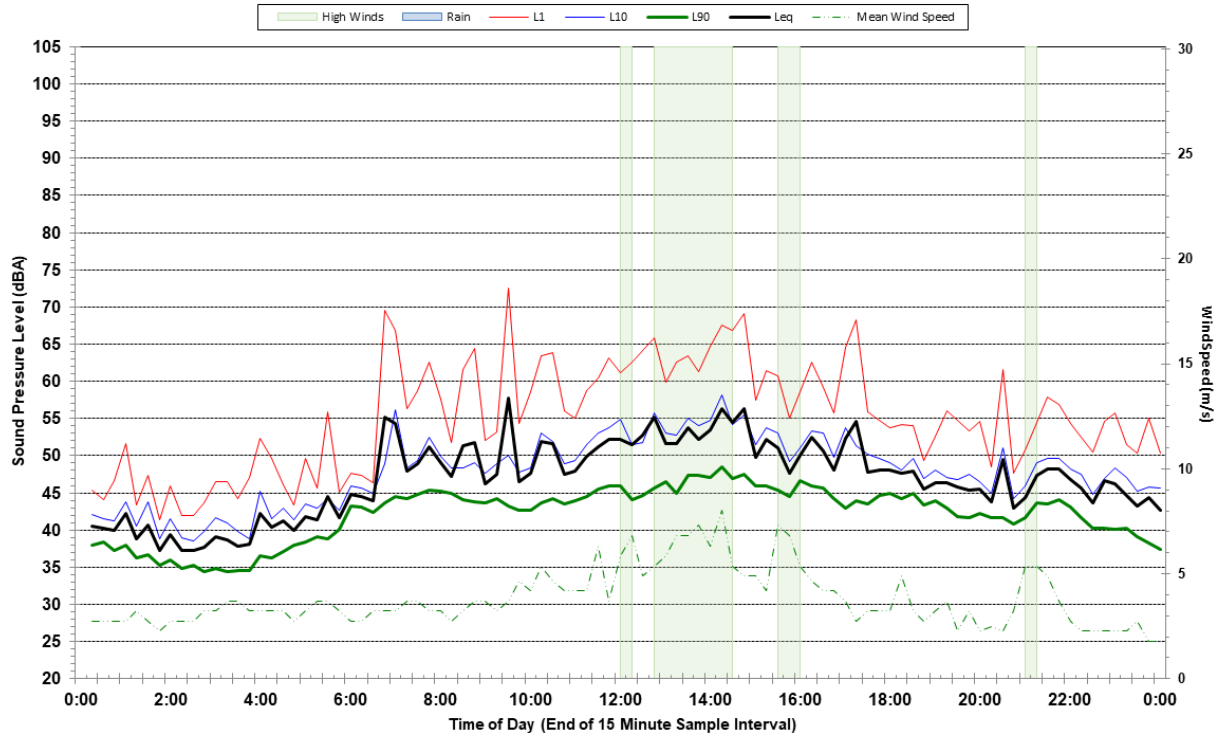
**Statistical Ambient Noise Levels  
257 Hector St Bass Hill - Monday 1 June 2026**



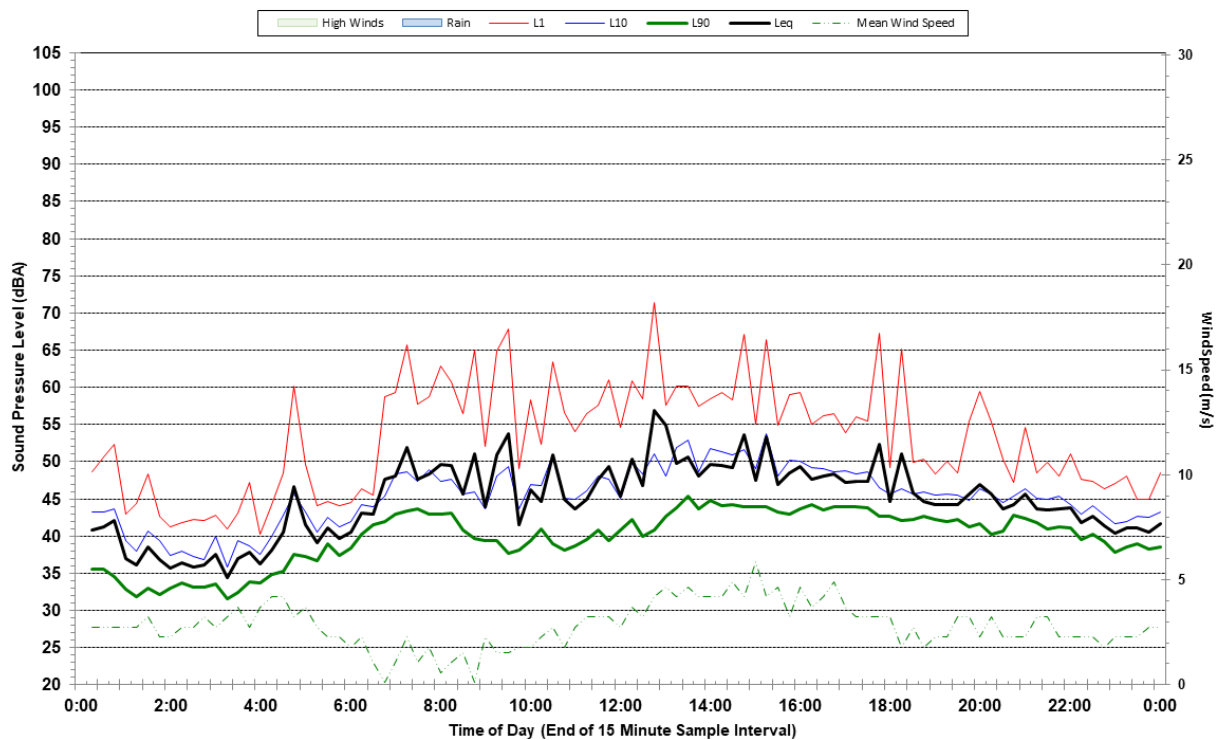
**Statistical Ambient Noise Levels  
257 Hector St Bass Hill - Tuesday 2 June 2026**



### Statistical Ambient Noise Levels 257 Hector St Bass Hill - Wednesday 3 June 2026



### Statistical Ambient Noise Levels 257 Hector St Bass Hill - Thursday 4 June 2026



### Statistical Ambient Noise Levels 257 Hector St Bass Hill - Friday 5 June 2026

