



## Noise Impact Assessment

**Client:** E.V.A.D Electrical Contracts Ltd

**Site:** Northern Accident Repair, Oldham Road, Rochdale

**Reference:** 1009251

**Revision:** 0

**Issued:** 26/11/2025

### Project Consultant

T. Brown BSc (Hons) MIOA  
*Acoustic Consultant*  
tom@acousticsurveys.co.uk

## Executive Summary

A Noise Impact Assessment has been undertaken at Northern Accident Repair, Oldham Road, Rochdale in relation to the proposed change of use of the site to industrial units.

Measurements of the background noise climate have been undertaken from 15<sup>th</sup> – 16<sup>th</sup> October 2025 at a position deemed representative of the identified Noise Sensitive Receptors (NSRs).

The nearest or most-affected Noise Sensitive Receptors have been identified as 1<sup>st</sup> floor flats at 21 Milnrow Road and 57 Oldham Road.

A BS4142:2014 Initial Impact Assessment of the predicted daytime noise impact indicated the potential for a 'significant adverse impact' at both NSR locations, with Rating Levels up to 28dB above the representative daytime background sound level.

A further Contextual Assessment has been undertaken where noise levels from the site have been assessed to the existing noise climate along with other relevant factors and deemed appropriate for the site to incorporate mitigation.

Based on an uprated roof specification, and operation of the site with external doors remaining closed, the mitigated impact is calculated to be 'Low' at NSR1 and Low/Adverse at NSR 2.

With the context of a worst-case scenario, actual noise impact is considered to be low in practice corresponding to achievement '*NOEL – No Observed Effect Level*' in the NPSE.

## Contents

|                                                              |           |
|--------------------------------------------------------------|-----------|
| <b>EXECUTIVE SUMMARY .....</b>                               | <b>2</b>  |
| <i>Contents .....</i>                                        | <i>3</i>  |
| <i>Tables .....</i>                                          | <i>4</i>  |
| <i>Figures .....</i>                                         | <i>4</i>  |
| <b>1. INTRODUCTION .....</b>                                 | <b>5</b>  |
| <i>Overview .....</i>                                        | <i>5</i>  |
| <i>Scope &amp; Objectives .....</i>                          | <i>5</i>  |
| <b>2. ENVIRONMENTAL NOISE SURVEY .....</b>                   | <b>5</b>  |
| <i>Measurement Methodology .....</i>                         | <i>5</i>  |
| <i>Site Description .....</i>                                | <i>7</i>  |
| <i>Context and Subjective Noise Climate .....</i>            | <i>8</i>  |
| <i>Non-Representative Noise Sources .....</i>                | <i>8</i>  |
| <i>Noise Sensitive Receptors .....</i>                       | <i>8</i>  |
| <b>3. ENVIRONMENTAL NOISE SURVEY RESULTS .....</b>           | <b>9</b>  |
| <i>Measurement Results .....</i>                             | <i>9</i>  |
| <b>4. BS4142:2014 INITIAL IMPACT ASSESSMENT .....</b>        | <b>10</b> |
| <i>Noise Modelling .....</i>                                 | <i>10</i> |
| <i>Source Noise Levels .....</i>                             | <i>10</i> |
| <i>Building Envelope Sound Insulation .....</i>              | <i>11</i> |
| <i>Specific Sound Levels .....</i>                           | <i>11</i> |
| <i>Rating Levels .....</i>                                   | <i>11</i> |
| <i>Rating Levels Vs Background .....</i>                     | <i>13</i> |
| <b>5. BS4142:2014 CONTEXTUAL ASSESSMENT .....</b>            | <b>13</b> |
| <i>Aspects of absolute level .....</i>                       | <i>13</i> |
| <i>Aspects of character .....</i>                            | <i>13</i> |
| <i>Aspects of the receptor .....</i>                         | <i>14</i> |
| <i>Contextual recommendations .....</i>                      | <i>14</i> |
| <b>6. MITIGATION .....</b>                                   | <b>14</b> |
| <b>7. CONCLUSION .....</b>                                   | <b>15</b> |
| <b>8. UNCERTAINTY .....</b>                                  | <b>15</b> |
| <b>APPENDIX A - MEASUREMENT DETAILS .....</b>                | <b>17</b> |
| <b>APPENDIX B - EQUIPMENT DETAILS .....</b>                  | <b>17</b> |
| <b>APPENDIX C - CALIBRATION DETAILS .....</b>                | <b>17</b> |
| <b>APPENDIX D - METEOROLOGY DETAILS .....</b>                | <b>18</b> |
| <b>APPENDIX E - NOISE SURVEY RESULTS .....</b>               | <b>19</b> |
| <b>APPENDIX F - GRID NOISE MAPS .....</b>                    | <b>20</b> |
| <b>APPENDIX G - SITE PLANS .....</b>                         | <b>23</b> |
| <b>APPENDIX H - LEGISLATION, POLICY &amp; GUIDANCE .....</b> | <b>24</b> |

|                                                |           |
|------------------------------------------------|-----------|
| <b>BS4142:2014+A1:2019 .....</b>               | <b>25</b> |
| <b>BS8233:2014 .....</b>                       | <b>26</b> |
| <b>APPENDIX I - ACOUSTIC TERMINOLOGY .....</b> | <b>27</b> |

## Tables

|                                                           |    |
|-----------------------------------------------------------|----|
| TABLE 1: SUBJECTIVE SUMMARY OF NOISE SOURCES .....        | 8  |
| TABLE 2: M1 BACKGROUND NOISE SURVEY RESULTS .....         | 9  |
| TABLE 3: CALCULATION INPUT PARAMETERS .....               | 10 |
| TABLE 4: MODELLED INTERNAL NOISE LEVELS .....             | 10 |
| TABLE 5: MODELLED BUILDING ELEMENT SOUND INSULATION ..... | 11 |
| TABLE 6: SPECIFIC SOUND LEVELS .....                      | 11 |
| TABLE 7: RATING LEVELS .....                              | 12 |
| TABLE 8: NOISE IMPACT .....                               | 13 |
| TABLE 9: UPRATED ROOF SPECIFICATION .....                 | 14 |
| TABLE 10: MITIGATED NOISE IMPACT .....                    | 15 |
| TABLE 11: MEASUREMENT DATES .....                         | 17 |
| TABLE 12: MEASUREMENT EQUIPMENT DETAILS .....             | 17 |
| TABLE 13: CALIBRATION DETAILS .....                       | 17 |

## Figures

|                                                                                                                          |    |
|--------------------------------------------------------------------------------------------------------------------------|----|
| FIGURE 1: SITE, SOURCE & NSR LOCATIONS - <a href="https://google.co.uk/maps">HTTPS://GOOGLE.CO.UK/MAPS</a> .....         | 7  |
| FIGURE 2: M1 BACKGROUND STATISTICAL ANALYSIS .....                                                                       | 9  |
| FIGURE 3: SITE LOCATION MEASUREMENT PICTURES .....                                                                       | 17 |
| FIGURE 4: METEOROLOGY DATA - <a href="https://www.timeanddate.com/weather">HTTPS://WWW.TIMEANDDATE.COM/WEATHER</a> ..... | 18 |
| FIGURE 5: MEASURED BACKGROUND SOUND LEVELS TIME HISTORY (M1): 15 <sup>TH</sup> – 16 <sup>TH</sup> OCTOBER 2025 .....     | 19 |
| FIGURE 6: 2D GRID NOISE MAP OF DAYTIME INITIAL IMPACT ASSESSMENT – DOORS OPEN .....                                      | 20 |
| FIGURE 7: 2D GRID NOISE MAP OF DAYTIME INITIAL IMPACT ASSESSMENT – DOORS CLOSED .....                                    | 21 |
| FIGURE 8: 2D GRID NOISE MAP OF DAYTIME MITIGATED IMPACT ASSESSMENT – DOORS CLOSED – UPRATED ROOF .....                   | 22 |

## 1. Introduction

### Overview

A Noise Impact Assessment has been undertaken at Northern Accident Repair, Oldham Road in relation to the proposed change of use of the site to 6 industrial units.

Future occupants of the proposed units are not yet known and so the assessment is based upon representative library data for industrial metal workshop noise breakout via the building envelope and openings.

An assessment of the potential noise breakout from the proposed industrial units is to be undertaken to determine whether nearby residents are likely to suffer a loss of amenity because of noise from the industrial units. Mitigation will be given should any potential loss of amenity be indicated.

### Scope & Objectives

The scope of the noise assessment can be summarised as follows:

- Baseline sound monitoring survey to evaluate the prevailing background sound levels at the Noise Sensitive Receptor ('NSR') in accordance with BS7445 - *'Description and Measurement of Environmental Noise'*;
- Detailed sound modelling, acoustic calculations and analysis to predict sound levels at the NSR using industry-standard acoustic modelling software 'SoundPLAN'. This software uses ISO-9613-2 - *Attenuation of sound during propagation outdoors*;
- A contextual assessment for the suitability of the site, in accordance with relevant standards in respect of sound from the proposed sources; and
- Recommendation of mitigation measures where necessary, to comply with the requirements of the National Planning Policy Framework (2024), Noise Policy for England (2010) and British Standard BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound.
- No local policy guidance or comments have been provided in relation to the assessment.
- Further information on the legislation can be found in **Appendix I**.

## 2. Environmental Noise Survey

### Measurement Methodology

To establish the existing environmental noise levels for the area, a noise survey has been conducted from 15<sup>th</sup> – 16<sup>th</sup> October 2025. Measurements of  $L_{Aeq,T}$  and  $L_{A90,T}$  were logged in 5-minute intervals in accordance with BS7445 - *'Description and Measurement of Environmental Noise'*.

The unattended monitoring location (M1) was positioned to the southwestern site boundary at a height of approximately 2 metres.

The monitoring position is deemed representative of sound levels at nearby noise sensitive receptors during the typical operational periods of the proposed development.

Further detail of the measurement along with site pictures is given in **Appendix A**.

Measurements were obtained using Class 1 instrumentation. Full equipment details are given in **Appendix B**.

Equipment was calibrated before and after use and no significant drift occurred during measurements. Up-to-date calibration certification can be provided upon request. Full calibration details are provided in **Appendix C**

Daytime temperatures during the survey were noted as between 11 - 12°C with wind speeds typically between 2 - 3m/s; deemed suitable for conducting environmental noise monitoring. Detailed meteorological information can be found in **Appendix D**.

The site, proposed noise source and NSR locations are shown in **Figure 1**.

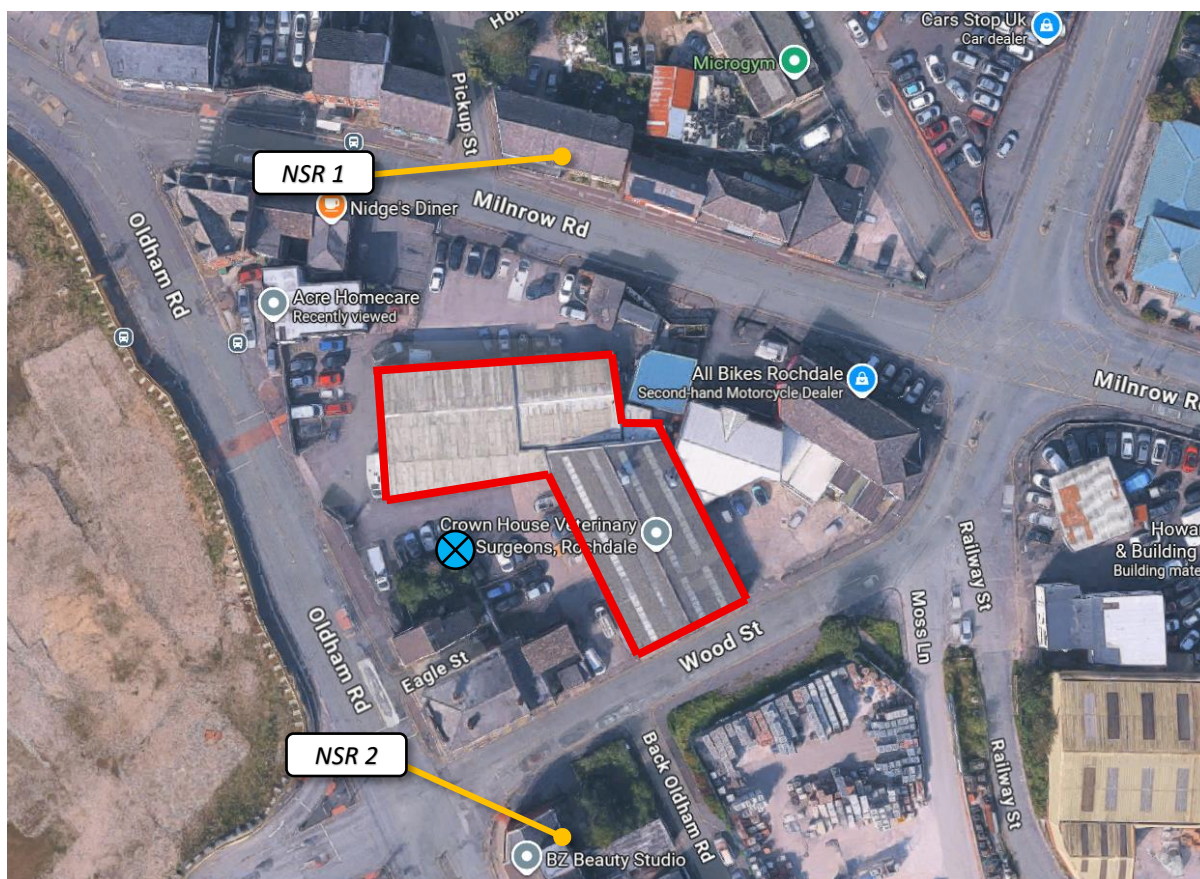


Figure 1: Site, Source & NSR Locations - <https://google.co.uk/maps>

-  Proposed Industrial Use
-  Noise Sensitive Receptors (NSRs)
-  Background Monitoring Location M1

## Site Description

The site is an existing commercial unit located between Milnrow Road, Wood Street and Oldham Road in Rochdale centre. Surrounding the site is a mix of other commercial units including café's, a pub and retail units. The surrounding roads are busy main roads and bus routes with pedestrian crossings.

## Context and Subjective Noise Climate

| Noise Source      | Description                                                                          | Time of Observation             | Photo                                                                                |
|-------------------|--------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------|
| Road              | Road traffic passing on all sides of the site including cars, vans, HGV's and buses. | Constant during site visits     |   |
| Construction Team | Small construction team on site including mini digger operations                     | Intermittent during site visits |  |
| Church Bells      | Church bells ringing in the area                                                     | Intermittent during site visits | N/A                                                                                  |

Table 1: Subjective Summary of Noise Sources

## Non-Representative Noise Sources

During the survey, no noise events occurred which would be deemed as atypical of the site location.

## Noise Sensitive Receptors

The nearest or most-affected Noise Sensitive Receptors (NSRs) have been identified as the 1<sup>st</sup> floor flat above 21 Milnrow Road to the north of the site and the 1<sup>st</sup> floor flat above 57 Oldham Road to the south of the site. The closest habitable room windows of the NSRs will be considered as specific reception points in calculations.

### 3. Environmental Noise Survey Results

#### Measurement Results

The proposed industrial units will operate only between the hours of 7am and 6pm.

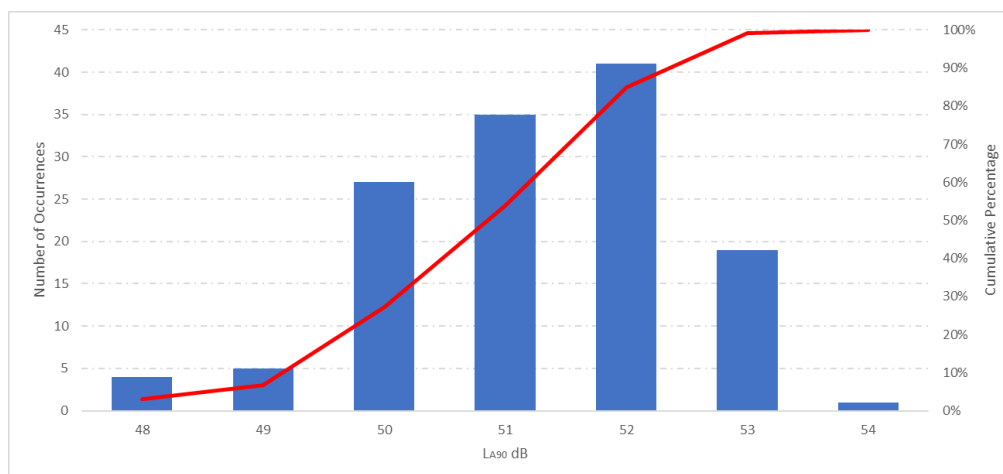
The day and night-time background sound levels from measurement M1 are summarised below.

| Measurement | Date(s)                                          | Period                     | $L_{Aeq,T}$ | $L_{A90,T}$ |
|-------------|--------------------------------------------------|----------------------------|-------------|-------------|
| M1          | 15 <sup>th</sup> & 16 <sup>th</sup> October 2025 | Daytime (07:00 – 23:00)    | 60          | 50          |
|             | 15 <sup>th</sup> – 16 <sup>th</sup> October 2025 | Night-time (23:00 – 07:00) | 52          | 32          |

**Table 2: M1 Background Noise Survey Results**

A full-time history of the survey data is shown in **Appendix E**.

For the derivation of a representative daytime background sound level, data obtained during the proposed daytime operating hours of the site has been statistically analysed:



**Figure 2: M1 Background Statistical Analysis**

From the statistical analysis of M1 measurement, **50dB  $L_{A90}$**  has been selected as the representative background sound level for the BS4142:2014 assessment at the NSR locations.

## 4. BS4142:2014 Initial Impact Assessment

### Noise Modelling

External sound propagation from the site has been calculated using industry-standard acoustic modelling software 'SoundPLAN'. This software uses ISO-9613-2 - *Attenuation of sound during propagation outdoors* and the model takes into account the following key factors:

- *Aerial Imagery & Terrain Data sourced from Google Maps/Elevations*
- *Geometric divergence of sound*
- *Atmospheric absorption of sound*
- *Ground absorption*
- *A light downwind correction toward the NSRs*
- *Surrounding structures and objects which may reflect or block sound toward the NSRs*
- *The height of the NSRs (i.e., First/second-floor reception point)*
- *Operational schedule of equipment*

The following input parameters were used in the noise model:

| Parameter                 | Input                 |
|---------------------------|-----------------------|
| Reflection Order          | 3                     |
| Ground Absorption Factors | G = 0.3 (Hard Ground) |
| Air pressure              | 1013.3 mbar           |
| Relative Humidity         | 70.0 %                |
| Temperature               | 10.0°C                |

**Table 3: Calculation Input Parameters**

### Source Noise Levels

The future tenants of the 6 proposed industrial units are not yet known and so a representative worst-case scenario will be considered whereby all units are in use as metalwork facilities.

The library data used for internal sound pressure levels is given below.

| Source              | Para.          | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | dBA |
|---------------------|----------------|----|-----|-----|-----|----|----|----|----|-----|
| Metal Shop Internal | L <sub>p</sub> | 80 | 80  | 85  | 90  | 80 | 85 | 80 | 80 | 91  |

**Table 4: Modelled Internal Noise Levels**

### Building Envelope Sound Insulation

From a review of the existing building and proposed site plans, the units are of a steel frame construction with brick and block external walls and corrugated steel sheet roof. It is also proposed to install large vehicular access doors to the units. The modelled approximate sound insulation values of the building envelope elements are provided below:

| Element             | Para. | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Rw |
|---------------------|-------|----|-----|-----|-----|----|----|----|----|----|
| External Wall       | SRI   | 34 | 50  | 58  | 61  | 73 | 87 | 92 | 92 | 67 |
| Roof                |       | 10 | 14  | 16  | 20  | 25 | 29 | 23 | 20 | 25 |
| Roller Shutter Door |       | 10 | 14  | 16  | 20  | 25 | 29 | 23 | 20 | 25 |

Table 5: Modelled Building Element Sound Insulation

To account for a worst-case scenario, all of the proposed units will be modelled to be operating throughout the proposed operating hours of 7am to 6pm.

The noise model does not account for minor landscape features such as low garden walls and fences.

### Specific Sound Levels

The Specific Sound Level is denoted  $L_{As}$  and is the A-weighted, equivalent noise level at the NSR locations. Specific Sound Levels have been calculated from the noise model and the levels at the worst affected floors of receptors are given below.

| Vehicular Access Doors | Location | Specific Sound Level, dB $L_{As}$ |
|------------------------|----------|-----------------------------------|
| Open                   | NSR 1    | 63                                |
|                        | NSR 2    | 68                                |
| Closed                 | NSR 1    | 51                                |
|                        | NSR 2    | 54                                |

Table 6: Specific Sound Levels

### Rating Levels

In accordance with BS4142, the Specific Sound Levels may be corrected for characteristics that make the sound more noticeable at the NSR location such as tonality, impulsivity and intermittency. Section 9.2 of BS4142:2014 gives commentary on these characteristics and appropriate penalties:

#### **“Tonality**

*For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a penalty of 2 dB for a tone which is just perceptible at the noise receptor, 4 dB where it is clearly perceptible, and 6 dB where it is highly perceptible.*

#### **Impulsivity**

*A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3 dB for impulsivity which is just perceptible at the noise receptor, 6 dB where it is clearly perceptible, and 9 dB where it is highly perceptible.*

### **Other sound characteristics**

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.

**NOTE 2** Where tonal and impulsive characteristics are present in the specific sound within the same reference period then these two corrections can both be taken into account. If one feature is dominant then it might be appropriate to apply a single correction. Where both features are likely to affect perception and response, the corrections ought normally to be added in a linear fashion.

### **Intermittency**

When the specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time. This can necessitate measuring the specific sound over a number of shorter sampling periods that are in combination less than the reference time interval in total, and then calculating the specific sound level for the reference time interval allowing for time when the specific sound is not present. If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.”

The nature of the noise output by a metal workshop or similar use means that it is likely to be tonal and/or impulsive. To account for this, a 4dB penalty will be applied in relation to tonality which is clearly perceptible and a penalty of 6dB will additionally be applied to account for clearly perceptible impulsivity.

The resultant Rating Levels are summarised below:

| <b>Vehicular Access Doors</b> | <b>Location</b> | <b>Specific Sound Level, dB L<sub>As</sub></b> | <b>Total BS4142 Character Corrections</b> | <b>Rating Level, dB L<sub>Ar</sub></b> |
|-------------------------------|-----------------|------------------------------------------------|-------------------------------------------|----------------------------------------|
| Open                          | NSR 1           | 63                                             | + 10                                      | 73                                     |
|                               | NSR 2           | 68                                             |                                           | 78                                     |
| Closed                        | NSR 1           | 51                                             |                                           | 61                                     |
|                               | NSR 2           | 54                                             |                                           | 64                                     |

**Table 7: Rating Levels**

### Rating Levels Vs Background

The Rating Levels are to be compared to the representative background sound level to determine the noise impact in accordance with BS4142.

*A Sound Rating Level at or below the background noise level is indicative of Low Impact;*

*A Sound Rating Level that exceeds the background noise level by around +5dB is likely an indication of Adverse Impact, depending on the context;*

*A Sound Rating Level that exceeds the background noise level by around +10dB is likely an indication of Significant Adverse Impact, depending on the context;*

The indicated noise impact at the identified Noise Sensitive Receptors is summarised below:

| Vehicular Access Doors | Location | Rating Level, dB<br>$L_{Ar}$ | Background Sound Level, dB $L_{A90}$ | Difference, dB | Noise Impact          |
|------------------------|----------|------------------------------|--------------------------------------|----------------|-----------------------|
| Open                   | NSR 1    | 73                           | 50                                   | +23            | 'Significant Adverse' |
|                        | NSR 2    | 78                           |                                      | +28            | 'Significant Adverse' |
| Closed                 | NSR 1    | 61                           |                                      | +11            | 'Significant Adverse' |
|                        | NSR 2    | 64                           |                                      | +14            | 'Significant Adverse' |

Table 8: Noise Impact

The noise impact at all receptor positions is indicative of a 'significant adverse impact' in accordance with BS4142:2014+A1:2019.

## 5. BS4142:2014 Contextual Assessment

### Aspects of absolute level

The high level difference between the background level and rating level at the NSRs with the doors of the units open means that the indicated significant adverse impact from the initial assessment is justified and there are limited contextual factors that would indicate a lower noise impact.

When the unit doors are closed the levels received at NSRs are significantly lower, however a significant adverse impact is still indicated.

### Aspects of character

The location of the site is an existing industrial area and it is likely that NSRs are accustomed to noise of an industrial nature and higher levels of noise generally. This may subjectively reduce the impact, though it is still the case that with the doors open, mitigation would be required in order to reduce the impact.

### Aspects of the receptor

The NSR locations are residential flats above commercial units and are assumed to be accustomed to the current noise climate from the existing operations of nearby industrial and commercial units. Similar sources to the proposal are already in operation such as a builders merchant yards to the south and east, therefore noise from the site would not be considered a 'new' type of noise for the area.

Taking guidance from BS8233:2014 for external amenity spaces, a desirable guideline of 50 dB  $L_{Aeq,16hr}$  and an acceptable guideline of 55 dB  $L_{Aeq,16hr}$  for noisier environments is deemed appropriate. Calculations from the Initial Impact Assessment display external noise levels within the acceptable range when industrial unit doors are closed. It is noted that existing noise levels at the NSRs were 10dB above the desirable limit on average.

Guidance is also taken from 'Appendix C' of the 'Acoustics Ventilation And Overheating: Residential Design Guide–January 2020' to specify an outside-to-inside level difference of approximately 13 dB through an open window. When this is applied to the predicted levels at the NSR locations, levels within the dwellings would exceed the criteria.

### Contextual recommendations

Based on a worst-case assessment, the operation of the proposed industrial units with the doors open is not recommended unless the business activities of the future occupants are quieter than those which have been assessed.

Operation of the Industrial Units with the doors closed could cause a 'Significant Adverse Impact' depending on the future occupants.

Based on the worst-case scenario of occupancy by metalworks facilities or similar, further mitigation would be required to achieve a 'Low Impact' at NSRs.

## 6. Mitigation

To reduce the noise impact of the proposed use, mitigation has been investigated in the form of an uprated roof specification. The existing roof is a large area of relatively poor sound insulation performance comprising a single layer of corrugated steel sheeting.

An uprated example specification has been modelled which utilises a resilient rail system, mounted to the underside of the existing internal frame and from this acoustic plaster board is mounted in 2 layers:

| Element                    | Para. | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | Rw |
|----------------------------|-------|----|-----|-----|-----|----|----|----|----|----|
| Uprated Roof Specification | SRI   | 15 | 24  | 38  | 46  | 53 | 53 | 57 | 57 | 48 |

Table 9: Uprated Roof Specification

The noise model has been updated to include the above specification and the following noise impact is calculated. Only the situation with the doors closed has been considered. Rating penalties have been maintained from the initial impact assessment.

| Vehicular Access Doors | Location | Rating Level, dB<br>$L_{Ar}$ | Background Sound Level, dB $L_{A90}$ | Difference, dB | Noise Impact           |
|------------------------|----------|------------------------------|--------------------------------------|----------------|------------------------|
| Closed                 | NSR 1    | 51                           | 50                                   | +1             | 'Low'                  |
|                        | NSR 2    | 56                           | 50                                   | +6             | Marginal Low / Adverse |

**Table 10: Mitigated Noise Impact**

Based on operations with external doors remaining closed and an uprated roof specification for the units, the noise impact at NSR 1 is calculated to be Low while the impact at NSR 2 is at the margin of a Low/Adverse impact.

The limiting factor at NSR 2 is the presence of 3 large proposed access doors on the west facing façade of the site which are a weak point for sound insulation and face the rear façade of NSR 2.

Taking the operational context into account, the assessment represents a conservative worst-case scenario. Under typical conditions, the actual noise impact is expected to be lower.

## 7. Conclusion

A Noise Impact Assessment has been undertaken at Northern Accident Repair, Oldham Road, Rochdale in relation to the proposed change of use of the site to industrial units.

Measurements of the background noise climate have been undertaken from 15<sup>th</sup> – 16<sup>th</sup> October 2025 at a position deemed representative of the identified Noise Sensitive Receptors (NSRs).

The nearest or most-affected Noise Sensitive Receptors have been identified as 1<sup>st</sup> floor flats at 21 Milnrow Road and 57 Oldham Road.

A BS4142:2014 Initial Impact Assessment of the predicted daytime noise impact indicated the potential for a 'significant adverse impact' at both NSR locations, with Rating Levels up to 28dB above the representative daytime background sound level.

A further Contextual Assessment was undertaken where noise levels from the site have been assessed to the existing noise climate along with other relevant factors and deemed appropriate for the site to incorporate mitigation.

Based on an uprated roof specification, and operation of the site with external doors remaining closed, a mitigated impact has been calculated to be Low at NSR1 and Low/Adverse at NSR 2.

With the context of a worst-case scenario, actual noise impact is considered to be low in practice for the mitigated scenario, corresponding to achievement 'NOEL – No Observed Effect Level' in the NPSE.

## 8. Uncertainty

The background monitoring equipment is subject to a 1dB error margin, however, calibration before and after measurements allows the drift within the margin to be monitored and thus demonstrates that minimal drift occurred throughout the measurements.

Uncertainty can arise in the prediction of noise propagation from and around flat reflective surfaces, such as the surrounding structures present on site. This has been reduced to a minimum by utilising an acoustic modelling software that uses the validated method, ISO-9613-2, as described in BS4142.

Uncertainty in the calculated specific sound levels is further reduced by utilising manufacturer-given sound power levels.

## APPENDIX A - Measurement Details

| Measurement | Kit | Start Date | Start Time | End Date   | End Time |
|-------------|-----|------------|------------|------------|----------|
| <b>M1</b>   | 4   | 15/10/2025 | 11:00      | 16/10/2025 | 11:20    |

Table 11: Measurement Dates



Figure 3: Site Location Measurement Pictures

## APPENDIX B - Equipment Details

| Kit      | Equipment   | Make   | Model | Class | Serial Number |
|----------|-------------|--------|-------|-------|---------------|
| <b>4</b> | Sound Meter | Svante | 977   | 1     | 45376         |
|          | Pre-Amp     | Svante | SV12L | 1     | 42561         |
|          | Microphone  | ACO    | 7052E | 1     | 59964         |
|          | Calibrator  | Svante | SV33  | 1     | 90107         |

Table 12: Measurement Equipment Details

## APPENDIX C - Calibration Details

| Measurement | Calibrator Ref Level (dB) | Deviation Before (dB) | Deviation After (dB) |
|-------------|---------------------------|-----------------------|----------------------|
| <b>M1</b>   | 113.60                    | 0.27                  | 0.26                 |

Table 13: Calibration Details

## APPENDIX D - Meteorology Details

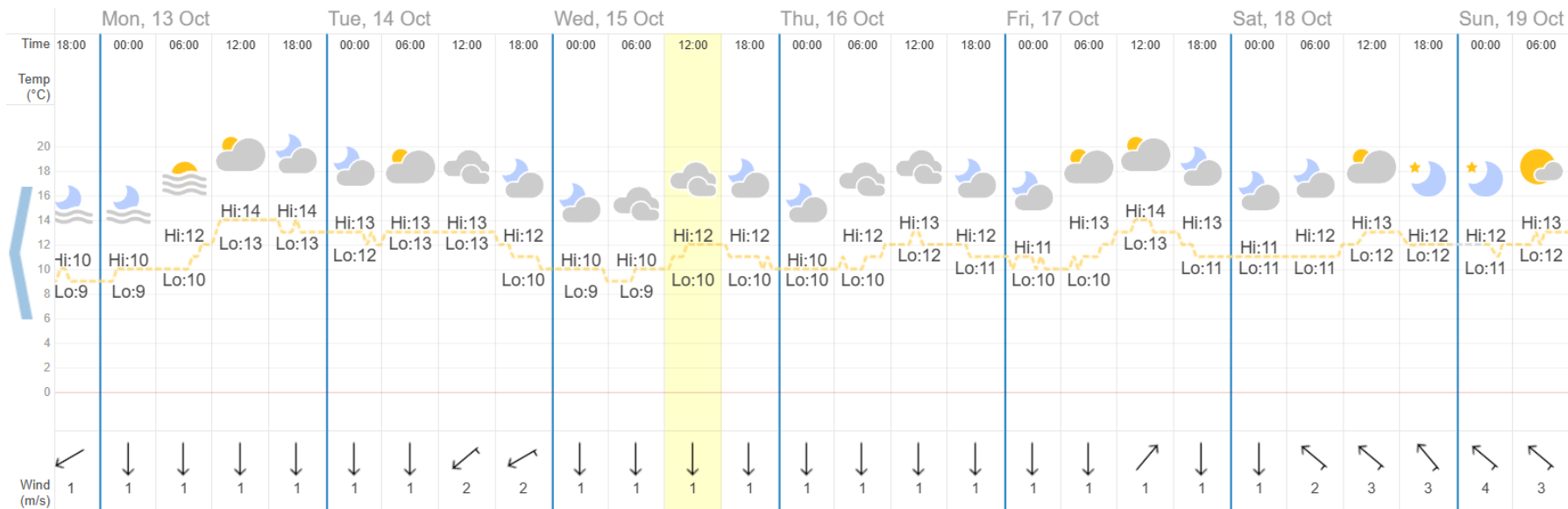


Figure 4: Meteorology Data - <https://www.timeanddate.com/weather>

## APPENDIX E - Noise Survey Results

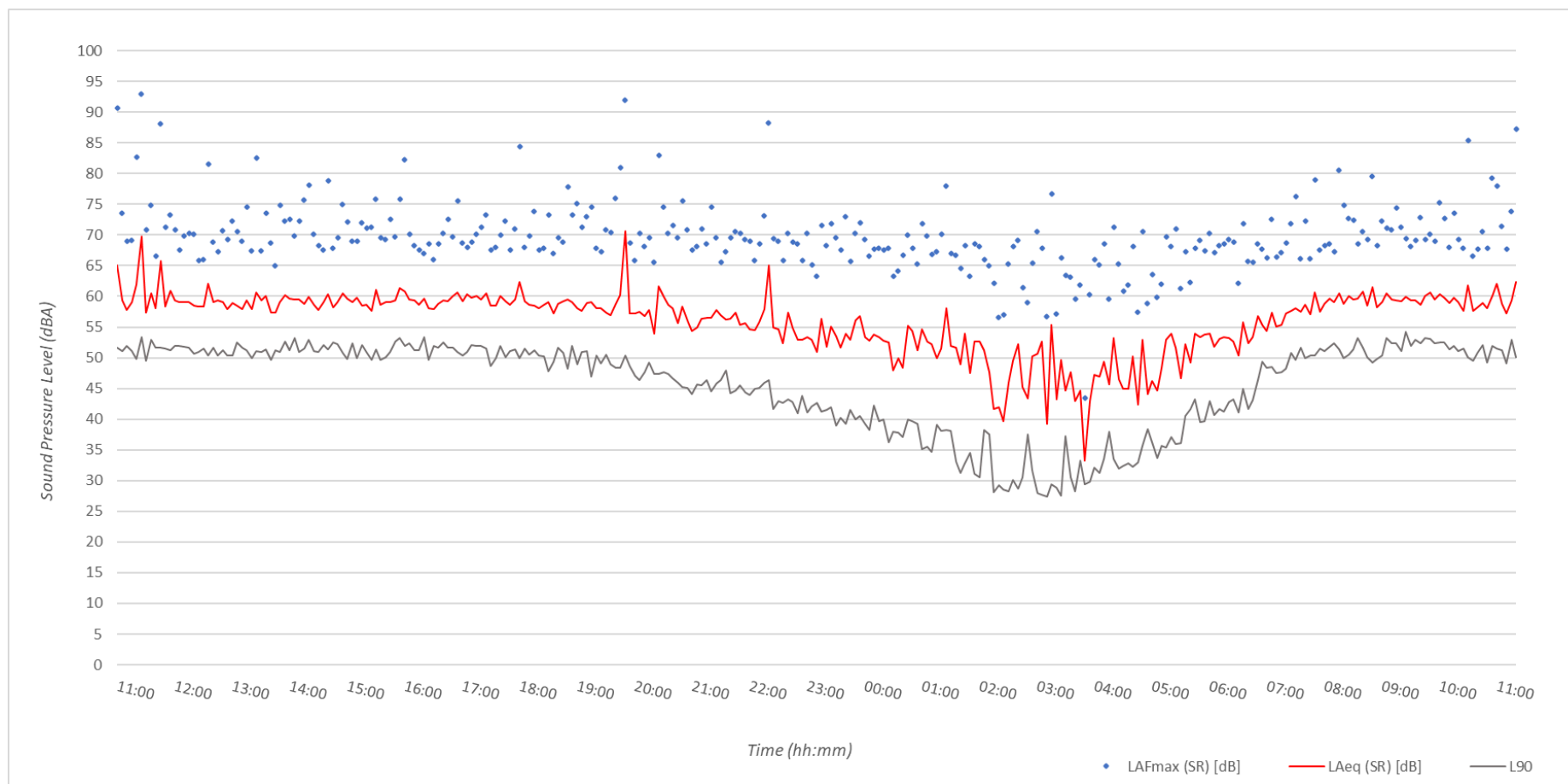


Figure 5: Measured Background Sound Levels Time History (M1): 15<sup>th</sup> – 16<sup>th</sup> October 2025

## APPENDIX F - Grid Noise Maps

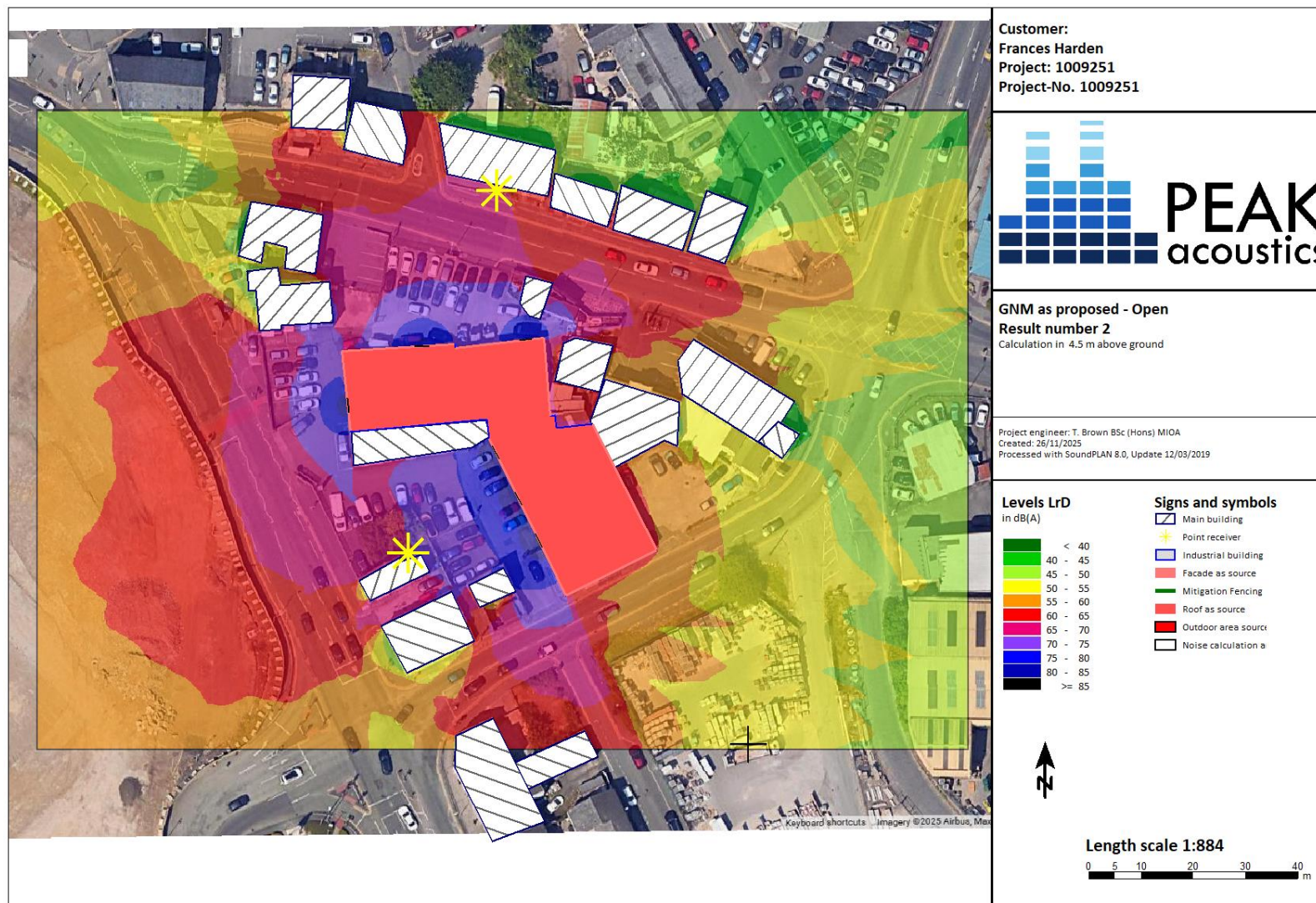


Figure 6: 2D Grid Noise Map of daytime Initial Impact Assessment – Doors Open

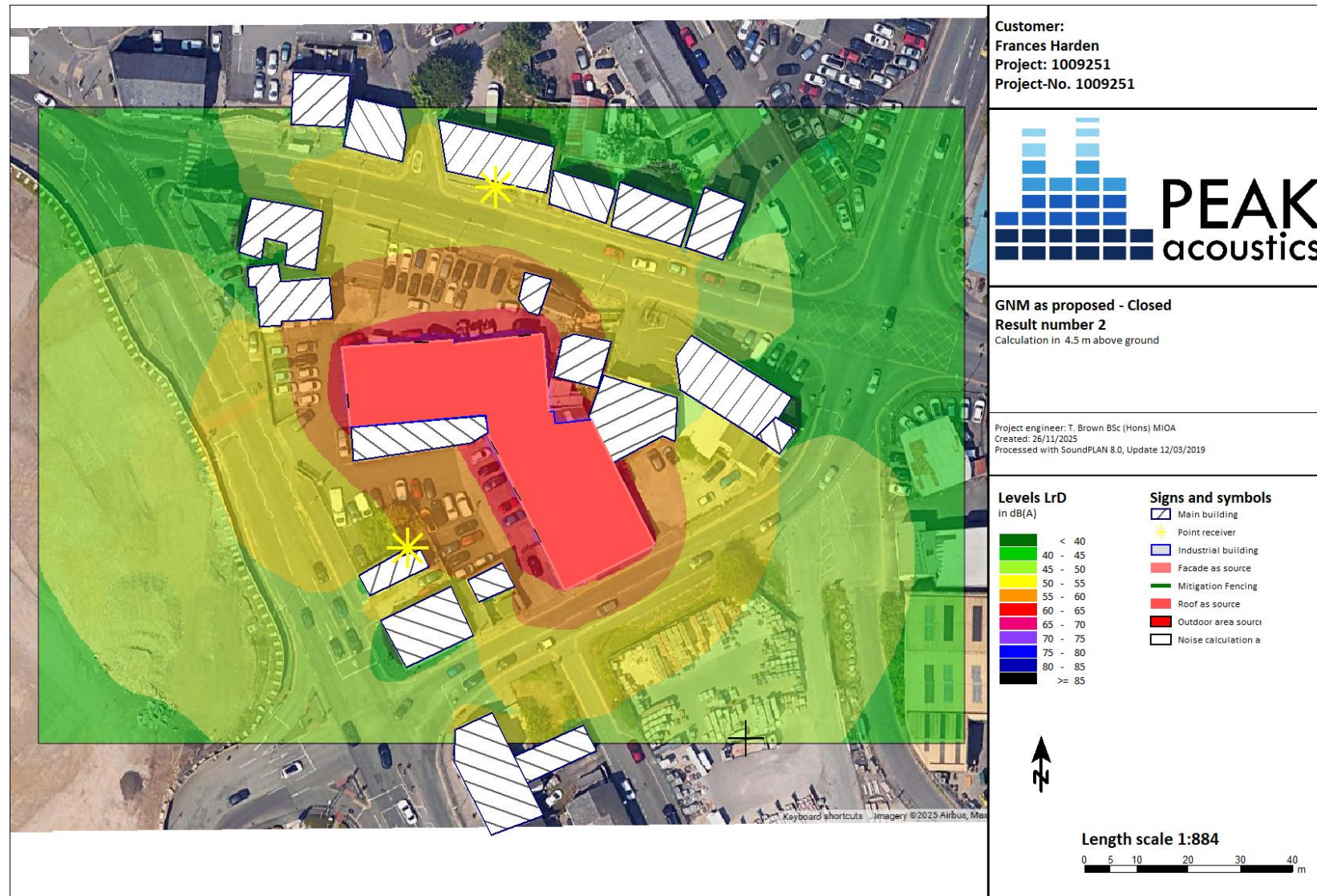


Figure 7: 2D Grid Noise Map of daytime Initial Impact Assessment – Doors Closed

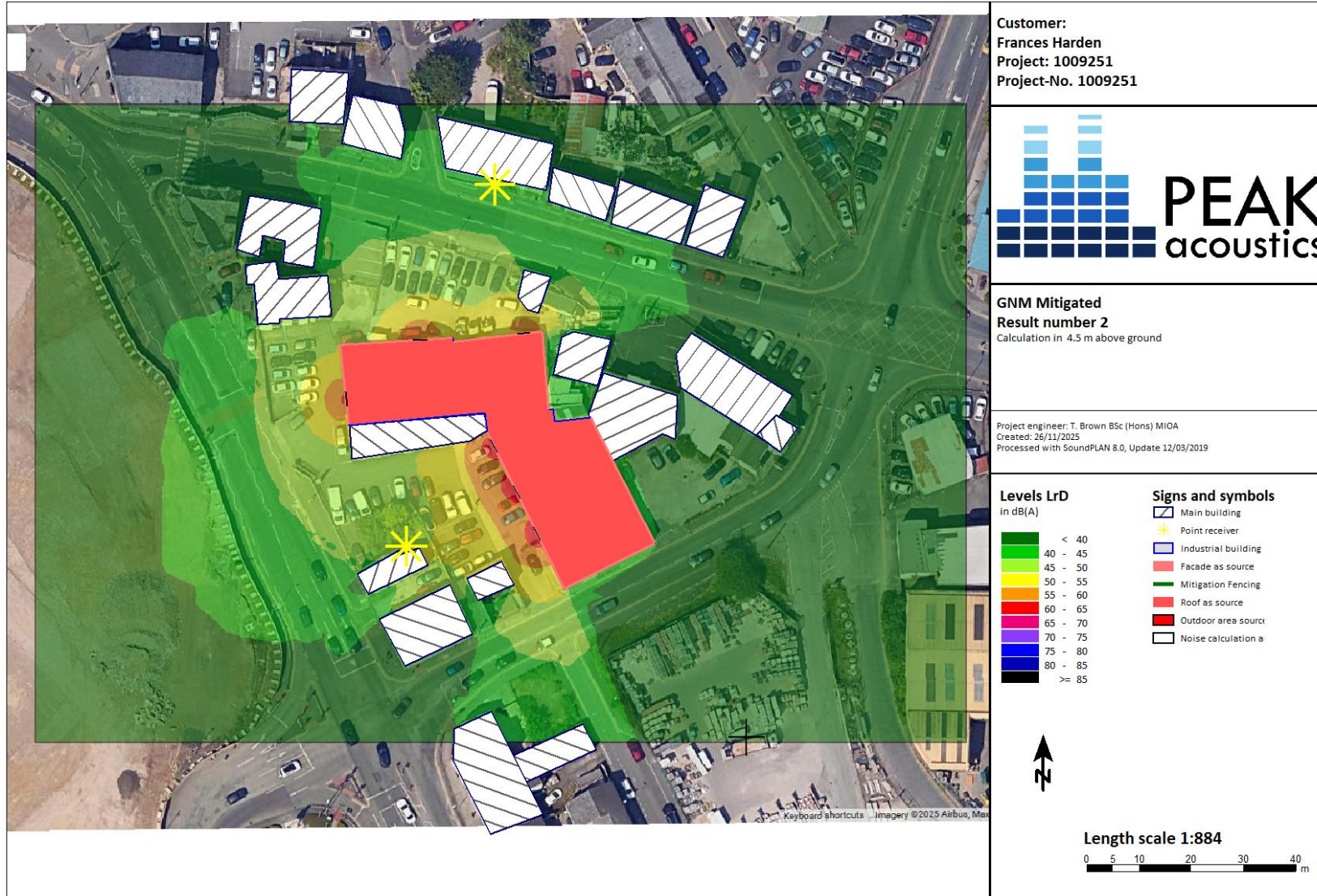
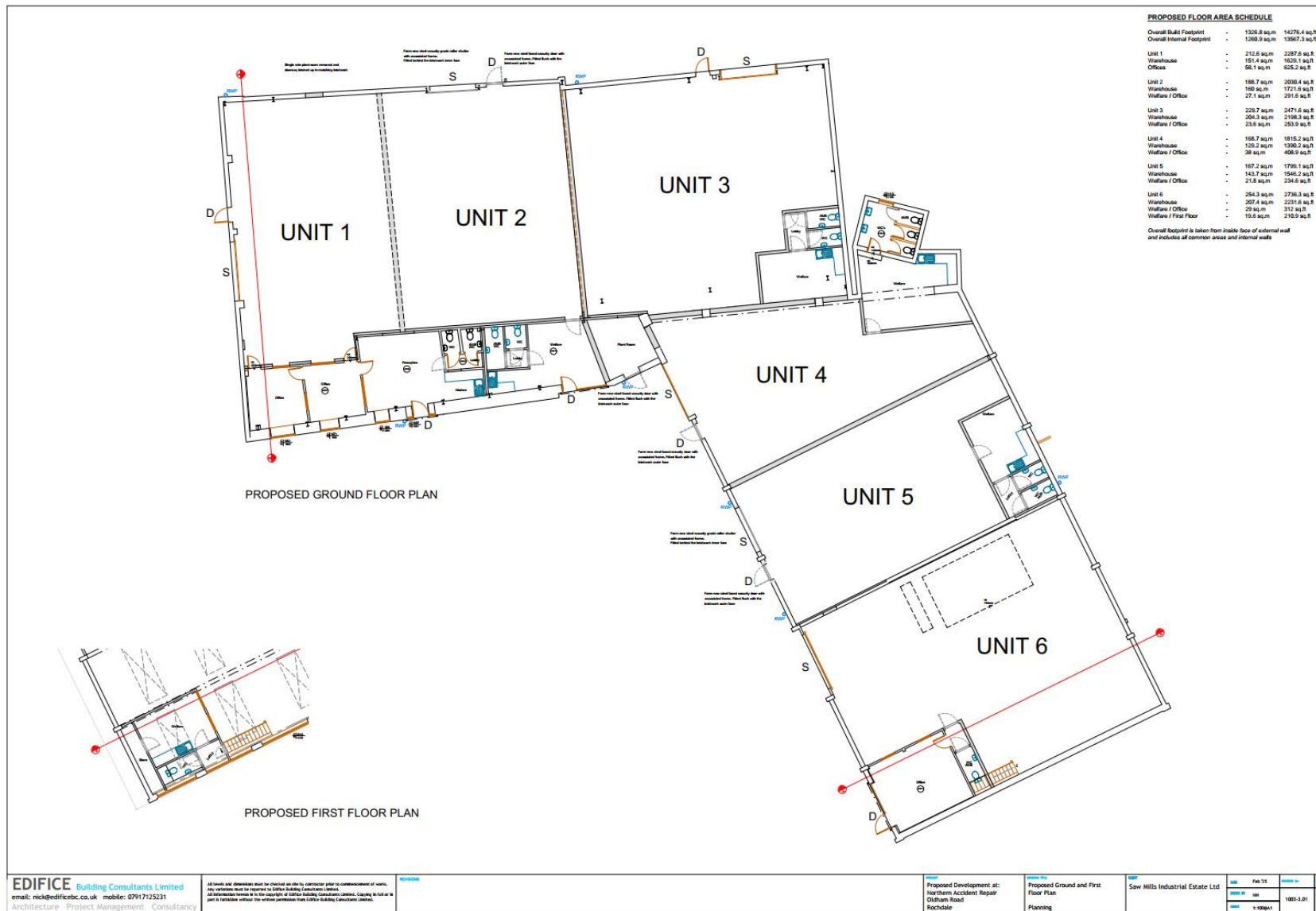


Figure 8: 2D Grid Noise Map of daytime Mitigated Impact Assessment – Doors Closed – Uprated Roof

## APPENDIX G - Site Plans



## APPENDIX H - Legislation, Policy & Guidance

Guidance for the assessment of noise affecting new residential development is given in the National Planning Policy Framework (NPPF). Section 15 of the NPPF states:

*“174. Planning policies and decisions should contribute to and enhance the natural and local environment by:*

*e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of...noise pollution.”*

Section 185 further states:

*“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*

- A. Mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the 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.”*

Section 187 states:

*“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”*

To avoid and mitigate adverse noise effects on health arising from and impacting new development, the NPPF makes reference to NPSE. The Noise Policy Statement for England (NPSE) was published in March 2010 and covers all forms of noise other than occupational noise.

The Noise Policy Statement for England (NPSE) states the following aims in paragraph 2.2.

**NOEL – No Observed Effect Level.**

*This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.*

**LOAEL – Lowest Observed Adverse Effect Level.**

*This is the level above which adverse effects on health and quality of life can be detected.*

**SOAEL – Significant Observed Adverse Effect Level.**

*This is the level above which significant adverse effects on health and quality of life occur.*

The NPSE does not define the SOAEL numerically, stating in paragraph 2.22:

*"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the "NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."*

There is no local or national guidance on how the three terms should be defined numerically, it is for the assessor to collate and interpret appropriate guidance on noise, such as may be found in British Standards, and correlate the guidance with the concepts of NOEL, LOAEL and SOAEL.

## BS4142:2014+A1:2019

The common standard for the assessment of industrial and commercial sound is '**BS4142 – Methods for rating and assessing industrial and commercial sound**'. The industrial noise assessment method in BS4142 is based on the difference between the measured 'background sound level' ( $L_{A90}$ ), and the 'Rating Level' of the industrial source, at a noise-sensitive location (NSR). BS4142:2014 states:

*"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs."*

An estimation of the impact of the specific sound can be obtained by the difference between the rating sound level and the background sound level whilst considering the following:

*"A Sound Rating Level at or below the background noise level is indicative of Low Impact;*

*A Sound Rating Level that exceeds the background noise level by around +5dB is likely an indication of Adverse Impact, depending on the context;*

*A Sound Rating Level that exceeds the background noise level by around +10dB is likely an indication of Significant Adverse Impact, depending on the context;"*

BS4142 further states:

*"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 negligible impact, depending on the context."*

Achievement of a *Low Impact* in accordance with BS4142 along with a contextual assessment can be deemed to correspond to '*NOEL – No Observed Effect Level*' in the NPSE.

## BS8233:2014

BS8233:2014 - *Guidance on sound insulation and noise reduction for buildings* suggests indoor ambient noise levels for dwellings in Table 4, Section 7.7.2. These are summarised below.

| Activity | Location         | 07:00 to 23:00         | 23:00 to 07:00        |
|----------|------------------|------------------------|-----------------------|
| Resting  | Living Room      | 35 dB $L_{Aeq,16hour}$ | -                     |
| Dining   | Dining room/area | 40 dB $L_{Aeq,16hour}$ | -                     |
| Sleeping | Bedroom          | 35 dB $L_{Aeq,16hour}$ | 30 dB $L_{Aeq,8hour}$ |

BS8233 states that the guideline values given above are for 'noise without character', further stating:

*"Noise has a specific character if it contains features such as a distinguishable, discrete and continuous tone, is irregular enough to attract attention, or has strong low-frequency content, in which case lower noise limits might be appropriate."*

Table 4 of BS8233 also has accompanying notes that were subject to additions in ProPG. The relevant notes with the additions of ProPG are given below.

*"NOTE 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or  $L_{Amax,F}$ , depending on the character and number of events per night. Sporadic noise events could require separate values. In most circumstances in noise sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB  $L_{Amax,F}$  more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events."*

*"NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal  $L_{Aeq}$  target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved."*

## APPENDIX I - Acoustic Terminology

To aid the understanding of acoustic terminology and the relative difference between noise levels the following background information is provided.

We perceive sound when the ear detects fluctuations in air pressure (sound waves), which are then processed by the brain and perceived as sound. Humans can hear an incredibly wide range of sound intensities ranging from jet engines to fingertips lightly brushing against each other. This range is quantified using a logarithmic scale called the decibel scale (dB). The comfortable range of the decibel scale typically ranges from 0dB (the threshold of hearing) to around 140dB. Here are some examples of common environments and their typical noise levels.

| Noise Level      | Environment                |
|------------------|----------------------------|
| 0 dB(A)          | Threshold of hearing       |
| 20 to 30 dB(A)   | Quiet bedroom at night     |
| 30 to 40 dB(A)   | Living room during the day |
| 40 to 50 dB(A)   | Typical office             |
| 50 to 60 dB(A)   | Inside a moving car        |
| 60 to 70 dB(A)   | Typical high street        |
| 100 to 110 dB(A) | Fire alarm at 1 metre away |
| 140 dB(A)        | Threshold of pain          |

### Terminology

**dB (decibel)** – A unit used to quantify the pressure level of sound. Defined as 20 times the logarithm of the ratio between the root-mean-square pressure of a given sound field and a reference pressure level ( $2 \times 10^{-5}$  Pa – threshold of hearing).

**$L_{Aeq, T}$**  – The equivalent continuous sound pressure level over a stated period. It quantifies a fluctuating sound level over a given period as the equivalent continuous sound level over which the same amount of acoustic energy is contained over. This is A-weighted in order to assess human perception.

**$L_{A90}$**  – The sound level exceeded 90% of the time. Typically used to describe background noise the  $L_{90}$  is regarded as the ‘average minimum level’ and quantifies the common sound level of a fluctuating sound field i.e. the sound level that occurs 90% of the time. Alternatively,  $L_{10}$  describes the sound level exceeded 10% of the time and therefore quantifies the ‘average maximum level’ of sound which is often used during the calculation of road traffic noise.

**A-Weighting** – A standard weighting of the audible frequencies designed to reflect the response of the human ear to noise.

**$R_w$**  – The Weighted Sound Reduction Index ( $R_w$ ) is a number used to rate the effectiveness of a soundproofing system or material.