



Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited

8<sup>th</sup> October 2024

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Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

## Report Details:

|              |                                                               |
|--------------|---------------------------------------------------------------|
| Report Title | Acoustic Impact Assessment                                    |
| Site         | Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading |
| Client       | Hallway Properties Limited                                    |
| Report No.   | H4037b – NV – v4                                              |

## Version History:

| Version | Date                          | Notes            | Author                   | Checked                     |
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*This report has been prepared by Hawkins Environmental Limited for the sole purpose of assisting in gaining planning consent for the proposed development described in the introduction of this report.*

*This report has been prepared by Hawkins Environmental Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.*

*This assessment takes into account the prevailing conditions at the time of the report and assesses the impact of the development (if applicable) using data provided to Hawkins Environmental Limited by third parties. The report is designed to assist the developer in refining the designs for the proposed development and to demonstrate to agents of the Local Planning Authority that the proposed development is suited to its location. This should be viewed as a risk assessment and does not infer any guarantee that the site will remain suitable in future, nor that there will not be any complaints either from users of the development or from impacts emanating from the development site itself.*

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1.

## 1. INTRODUCTION

### 1.1. Overview

Hawkins Environmental Limited has been instructed by Hallway Properties Limited, to undertake an acoustic impact assessment for the proposed variation in operational hours of units 7 and 8 (occupied by Holme Dodsworth Metals) of the Heron Industrial Estate. The proposal is to extend the existing operation hours to 05:00-23:00 5 days per week from the current operating hours of 7am to 7pm.

#### 1.1.1. Criteria

During the planning process, it has been identified that the site may require a noise assessment to determine whether noise emissions from the industrial estate would be in line with permitted levels. Consequently, a noise survey was conducted to characterise the noise climate of the site and the impact of plant, deliveries and industrial activities has been assessed.

The assessment adheres to the principles of Government planning policy in relation to noise, specifically enacted by the *National Planning Policy Framework (NPPF)*, the *National Planning Practice Guidance (NPPG) on Noise* and the *Noise Policy Statement for England (NPSE)*.

All sound measurements were conducted in accordance with BS 7445-2: 1991 '*Description and measurement of environmental noise Part 2: Guide to the acquisition of data pertinent to land use*'. The assessment of plant sound has been assessed in accordance with British Standard BS 4142: 2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*'.

### 1.2. Report Update

This version of the report has been prepared following feedback from a meeting with Wokingham Borough Council's environmental health department in April 2024 and supersedes the January 2024 version of the Acoustic Impact Assessment.

Wokingham Borough Council have suggested that a noise survey on the southern boundary of the site may yield more accurate background noise levels than relying on noise measurements conducted on the other side of the site. In addition, the Council requested that the potential impact of a barrier along the southern boundary of the site should also be considered. This updated report includes both the additional noise survey and the consideration of a noise barrier.

Holme Dodsworth Metals wished to undertake specific activities during the nighttime period, specifically the unloading of goods from a lorry, once during the nighttime period. The January 2024 version of the Acoustic Impact Assessment concluded that noise from the activities that Holme Dodsworth Metals wished to undertake at night would likely have a low impact. However, the Council were concerned that whilst they understood that these activities would have a low impact, if consent was granted for nighttime working at Units 7/8, this would not preclude Holme Dodsworth Metals or anyone else to conduct additional activities. Consequently, Wokingham Borough Council recommended the preparation of a Noise Management Plan (NMP), detailing the activities that would be undertaken and highlighting the measures put in place to manage noise, with the intention that this NMP could be enforced by condition. Consequently, this report includes the NMP and provides a draft management plan.

### 1.3. The Nature, Measurement and Effect of Noise

Noise is often defined as sound that is undesired by the recipient. Whilst it is impossible to measure nuisance caused by noise directly, it is possible to measure the loudness of that noise. 'Loudness' is related to both sound pressure and frequency, both of which can be measured. The human ear is sensitive to a wide range of sound levels. The sound pressure level of the threshold of pain is over a million times that of the quietest audible sound. In order to reduce the relative magnitudes of the numbers involved, a logarithmic scale of decibels (dB) is normally used, based on a reference level of the lowest audible sound.

The response of the human ear is not constant over all frequencies. It is therefore usual to weight the measured frequencies to approximate the human response. The resulting 'A' weighted decibel, dB(A), has been shown to correlate closely to the subjective human response.

When related to changes in noise, a change of ten decibels from say 60 dB(A) to 70 dB(A) would represent a doubling in 'loudness'. Similarly, a decrease in noise from 70 dB(A) to 60 dB(A) would represent a halving in 'loudness'. A change of 3 dB(A) is generally considered to be just perceptible. **Table 1.1** details typical noise levels. A glossary of acoustic terms can be found in **Appendix 1**.

**Table 1.1: Typical Noise Levels**

| Approximate Noise Level<br>(dB(A)) | Example                         |
|------------------------------------|---------------------------------|
| 0                                  | Limit of hearing                |
| 30                                 | Rural area at night             |
| 40                                 | Library                         |
| 50                                 | Quiet office                    |
| 60                                 | Normal conversation at 1 m      |
| 70                                 | In car noise without radio      |
| 80                                 | Household vacuum cleaner at 1 m |
| 100                                | Pneumatic drill at 1 m          |
| 120                                | Threshold of pain               |

### 1.4. Site Description

The development site is situated along Basingstoke Road within Spencers Wood, a village in the civil parish of Shinfield, Berkshire. The site comprises of an industrial estate with several commercial units in addition to an area of hardstanding. The proposed scheme will see the variation of the operational hours of units 7 and 8 of the industrial estate to operate between 5am and 11pm from the existing operational hours of 7am to 7pm with HGV deliveries anticipated during the extended hours. Units 7 and 8 are operated by Holme Dodsworth Metals who process and distribute non-ferrous metals.

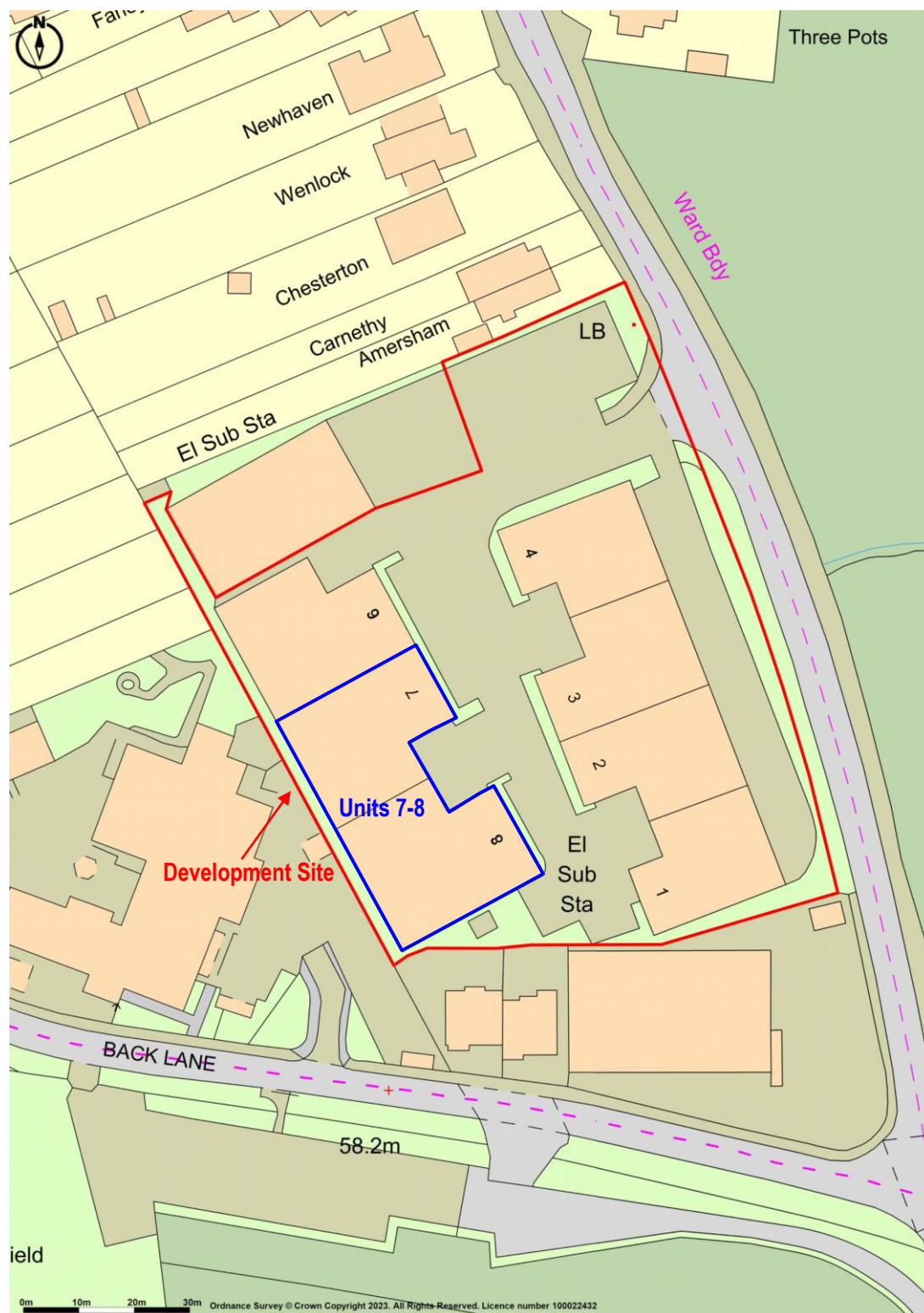
A location plan of the proposed site can be seen in **Figure 1.1**.

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Figure 1.1: Site Location Plan

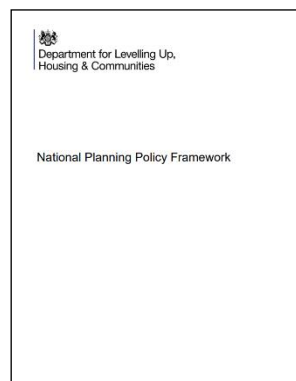


## 2. PLANNING POLICY & GUIDANCE

### 2.1. National Planning Policy Framework (2023)

The National Planning Policy Framework (NPPF) was first published on the 27<sup>th</sup> March 2012 and revised July 2018, February 2019, July 2021 and September 2023, with the latest version published in December 2023 in response to the Levelling-up and Regeneration Bill.

The NPPF outlines the Government's planning policies for England and determines how they should be applied. It provides a framework within which Local Planning Authorities are required to prepare their own locally-prepared plans, where both the policies within the NPPF and the local plan are material planning considerations against which planning decisions are determined. These distinctive local and neighbourhood plans should be interpreted and applied in order to meet the needs and priorities of their communities.



The NPPF notes *“The purpose of the planning system is to contribute to the achievement of sustainable development, including the provision of homes, commercial development, and supporting infrastructure in a sustainable manner”* (Paragraph 7). The NPPF notes sustainable development should be delivered with three main dimensions: economic; social and environmental (Paragraph 8).

The NPPF supports a presumption in favour of development, unless the adverse impacts of that development outweighs the benefits it notes *“that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development”* (Paragraph 10).

The NPPF states that in the planning system *“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 soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans”* (Paragraph 180).

Paragraph 191 of the NPPF talks specifically about noise stating that *“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 impacts 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...”*

Specifically in relation to noise from existing commercial premises, Paragraph 193 of the NPPF notes: *“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".*

## 2.2. Noise Policy Statement for England (2010)

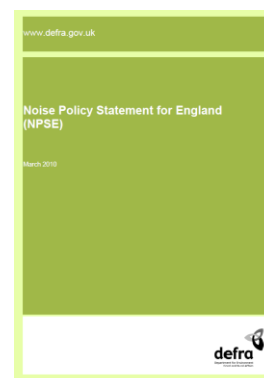
The Noise Policy Statement for England (NPSE) provides further guidance on the interpretation of Section 123 of the NPPF and states that: *"Within the context of sustainable development:*

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- where possible contribute to the improvement of health and quality of life."

NPSE introduces established concepts originally from the field of toxicology that are now being applied to noise impacts. They are:

- **NOEL – No Observed Effect Level** - This is the level of noise 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 of noise 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.

NPSE goes on to state that *"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."*

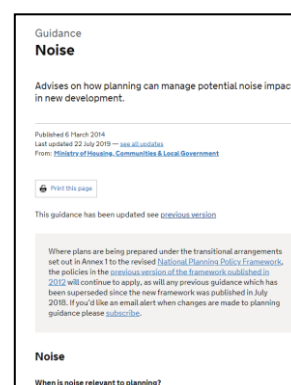


## 2.3. Planning Practice Guidance

The Planning Practice Guidance was launched on 6<sup>th</sup> March 2014 and provides additional guidance and interpretation to the Government's strategic policies, outlined within the NPPF, in a web-based resource. This is updated regularly.

The NPPG provides more guidance on the assessment of noise for planning purposes and builds on the concepts of NOEL, LOAEL and SOAEL introduced in NPSE to establish whether noise is a factor that needs to be taken into account. It states: *"Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:*

- *whether or not a significant adverse effect is occurring or likely to occur;*



- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

*In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation."*

However, it goes into more detail about the subjective nature of noise and how the results of any assessment must be treated flexibly and pragmatically. The guidance states: *"The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation. These factors include:*

- *the source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day – this is because people tend to be more sensitive to noise at night as they are trying to sleep. The adverse effect can also be greater simply because there is less background noise at night;*
- *for non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise;*
- *the spectral content of the noise (ie whether or not the noise contains particular high or low-frequency content) and the general character of the noise (ie whether or not the noise contains particular tonal characteristics or other particular features). The local topology and topography should also be taken into account along with the existing and, where appropriate, the planned character of the area.*

*More specific factors to consider when relevant include:*

- *the cumulative impacts of more than one source of noise;*
- *whether any adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time (and the effect this may have on living conditions). In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations.*
- *In cases where existing noise sensitive locations already experience high noise levels, a development that is expected to cause even a small increase in the overall noise level may result in a significant adverse effect occurring even though little to no change in behaviour would be likely to occur.*
- *Noise Action Plans (where these exist), and, in particular the Important Areas identified through the process associated with the Environmental Noise Directive and corresponding regulations should be taken into account. Defra's website has information on Noise Action Plans and Important Areas. Local authority environmental health departments will also be able to provide information about Important Areas.*

- *the effect of noise on wildlife. Noise can adversely affect wildlife and ecosystems. Particular consideration needs to be given to the potential effects of noisy development on international, national and locally designated sites of importance for biodiversity;*
- *where external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended.*
- *some commercial developments including restaurants, hot food takeaways, night clubs and public houses can have particular impacts, not least because activities are often at their peak in the evening and late at night. Local planning authorities will wish to bear in mind not only the noise that is generated within the premises but also the noise that may be made by customers in the vicinity”.*

**Table 2.1** shows examples of the noise hierarchy (adapted from the PPG) and shows that the aim is to identify where the overall effect of the noise exposure falls in relation to SOAEL, LOAEL and NOEL. The implication of the advice is that only noise that is ‘noticeable and very disruptive’ would be considered unacceptable and therefore, should be prevented. The inference, therefore, is that all other outcomes can be acceptable, depending upon the specific circumstances and level of mitigation.

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Table 2.1: Noise Exposure Hierarchy

| Perception                                | Examples of outcomes                                                                                                                                                                                                                                                                                                                                                                                              | Increasing effect level             | Action                           |                  |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------|------------------|
| Not noticeable                            | No Effect                                                                                                                                                                                                                                                                                                                                                                                                         | No Observed Effect                  | No specific measures required    | Low Noise Level  |
| Noticeable and not intrusive              | Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.                                                                                                                                                                                                           | No Observed Adverse Effect          | No specific measures required    |                  |
| Lowest Observed Adverse Effect Level      |                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |                                  |                  |
| Noticeable and intrusive                  | Noise can be heard and causes small changes in behaviour and/or attitude, eg turning up the volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. The potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life. | Observed Adverse Effect             | Mitigate and reduce to a minimum |                  |
| Significant Observed Adverse Effect Level |                                                                                                                                                                                                                                                                                                                                                                                                                   |                                     |                                  |                  |
| Noticeable and disruptive                 | The noise causes a material change in behaviour and/or attitude, eg avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. The potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep.                        | Significant Observed Adverse Effect | Avoid                            |                  |
| Noticeable and very disruptive            | Extensive and regular changes in behaviour and/or an inability to mitigate the effect of noise leading to psychological stress or physiological effects, eg regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, eg auditory and non-auditory                                                                                                                            | Unacceptable Adverse Effect         | Prevent                          | High Noise Level |

Increasing Noise Levels  
↓

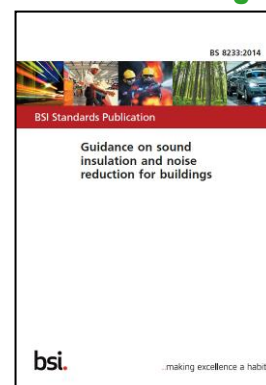
### 3. ASSESSMENT METHODOLOGY & GUIDANCE

#### 3.1. BS 8233: 2014 ‘Guidance on Sound Insulation and Noise Reduction for Buildings’

Originally published in 1999, the 2014 edition of BS 8233, significantly updates the guidance in light of the policy changes as a result of the advent of the NPPF and the withdrawal of PPG 24. The 2014 edition of BS 8233 sees a change in the title of the Standard, moving from a ‘Code of Practice’ to ‘Guidance’, as the text ‘largely comprises guidance that does not support claims of compliance’.

BS 8233:2014 indicates that to control external noise ingress into a proposed development, a number of planning stages should occur as follows:

- “Assess the site, identify significant existing and potential noise sources, measure or estimate noise levels, and evaluate layout options.
- Determine design noise levels for spaces in and around the building(s).
- Determine sound insulation of the building envelope, including the ventilation strategy”.



BS 8233:2014 suggests design noise levels for various types of building. The recommended noise levels for dwelling houses, flats and rooms in residential use (when unoccupied) can be seen in **Table 3.1** below. This is replicated from Table 4 of Section 7.7.2 of BS 8233:2014. The guidance suggests that “In general, for steady external noise sources, it is desirable that the internal ambient noise level does not exceed the guideline values”. The noise levels in **Table 3.1** are marginally different to those published in BS 8233:1999 ‘Sound insulation and noise reduction for buildings – Code of practice’, but are based on the existing guidance from the current World Health Organisation (WHO) “Guidelines on Community Noise”.

**Table 3.1: Summary of Noise Criteria: BS 8233: 2014**

| 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 $L_{Aeq,8hour}$ |

When considering the noise level criteria considered in **Table 3.1**, the following points should be noted:

- BS 8233: 2014 suggests that the above criteria should be adopted flexibly and that “where development is considered necessary or desirable... the internal target level may be relaxed by up to 5 dB and reasonable internal conditions still achieved”.
- The noise levels quoted above are annual averages and “do not need to be achieved in all circumstances” e.g. New Year’s Eve or fireworks night.

- The noise levels in **Table 3.1** are “for steady external noise sources” such as traffic noise or plant noise. This is a departure from the 1999 version of BS 8233, where the recommended internal noise levels were irrespective of the external noise source and therefore included the suggestion that in order to achieve “reasonable” noise levels within bedrooms at night,  $L_{AFmax}$  noise levels should not exceed 45 dB. Whilst this has been omitted from the 2014 version of BS 8233, it does state that “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.” Therefore, at sites which may be affected by individual noise events, it is more appropriate to use the guidance contained within the WHO “Guidelines on Community Noise” which suggest that good sleep will not generally be affected if internal levels of  $L_{AFmax}$  45 dB are not exceeded more than 10-15 times per night.
- BS 8233:2014 notes that if the design of the building is “relying on closed windows to meet the guide values, there needs to be appropriate alternative ventilation that does not compromise the facade insulation or resulting noise level”.
- BS 8233 provides guidance for noise in gardens and outdoor amenity space. It suggests that “it is desirable that the external noise level does not exceed 50 dB  $L_{Aeq,T}$ , with an upper guideline value of 55 dB  $L_{Aeq,T}$  which would be acceptable in noisier environments.” The guidance does go on to say that these guideline values are not achievable in all circumstances and in some areas, “such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.”

### 3.2. World Health Organisation Guidelines for Community Noise (1999)

The 1999 World Health Organisation (WHO) guidance “Guidelines for Community Noise”, provides recommendations on maximum internal and external noise levels in a range of situations. The WHO guidelines are a consequence of a comprehensive review of the scientific evidence in relation to community noise exposure and the health and social aspects of such exposure. Whilst not adopted policy, the recommendations within the WHO Guidelines are often quoted and form the basis of the recommendations within BS 8233 and other similar guidance. A summary of the noise criteria can be seen in **Table 3.2**.

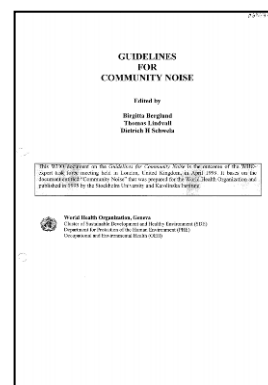
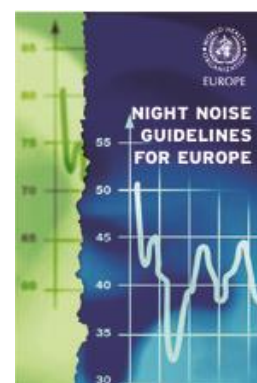


Table 3.2: Summary of Noise Criteria: WHO

| Residential Environment | Critical Health Effect                                             | L <sub>Aeq</sub> | L <sub>AFmax</sub> | Time Base   |
|-------------------------|--------------------------------------------------------------------|------------------|--------------------|-------------|
| Outdoor living area     | Serious annoyance, daytime and evening                             | 55               | -                  | 07:00-23:00 |
|                         | Moderate annoyance, daytime and evening                            | 50               | -                  | 07:00-23:00 |
| Dwelling, indoors       | Speech intelligibility and moderate annoyance, daytime and evening | 35               | -                  | 07:00-23:00 |
| Inside bedrooms         | Sleep disturbance, night-time                                      | 30               | 45                 | 23:00-07:00 |
| Outside bedrooms        | Sleep disturbance, window open (outdoor values)                    | 45               | 60                 | 23:00-07:00 |

### 3.3. WHO Night Noise Guidelines for Europe (2009)

In 2009, the World Health Organisation published the “*Night Noise Guidelines for Europe*” as a partial update and extension to the “*Guidelines for Community Noise*”, specifically in relation to development on the scientific evidence of night noise exposure. The 2009 guidance suggests that a “*L<sub>night,outside</sub> of 40 dB should be the target of the night noise guideline (NNG) to protect the public, including the most vulnerable groups such as children, the chronically ill and the elderly*”. However, since that target would be impossible to achieve in many situations, a “*L<sub>night,outside</sub> value of 55 dB is recommended as an interim target for the countries where the NNG cannot be achieved in the short term for various reasons, and where policy-makers choose to adopt a stepwise approach*”.

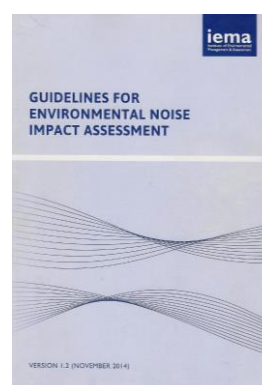


### 3.4. IEMA Guidelines for Environmental Noise Assessment (2014)

The 2014 IEMA “*Guidelines for Environmental Noise Assessment*” address the key principles of noise impact assessment and are applicable to all development proposals where noise effects may occur. The guidance provides advice with regards to the collection of baseline noise data, prediction of noise levels and how noise should be assessed.

Whilst the guidance contains a great deal of technical guidance for the noise practitioner, it also provides guidance on the assessment of significance, which is replicated later in this chapter.

The IEMA Guidelines provides guidance on how to assess the effects and significance of developments, but it stops short of providing specific assessment criteria which developments should achieve. The guidance instead suggests that the methodology adopted should be selected on a site by site basis with reference to relevant national and local standards, since the guidance recognises that the effect associated with a particular noise impact will be dependent on a number of



factors including but not limited to the sensitivity of the receptor, frequency and duration of the noise source and time of day.

When describing the magnitude of the noise effect, the IEMA guide does not suggest a definitive method but does give a number of examples of ways of describing and determining the magnitude. One such example, which has been used in this assessment, is set out in **Table 3.3** below.

**Table 3.3: Magnitude of Change in Noise Levels**

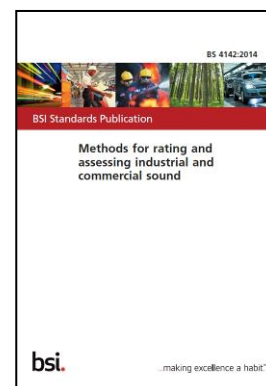
| Long Term Impact Magnitude | Sound Level Change dB $L_{Aeq,T}$<br>(positive or negative)<br>T= 16 hour day or 8 hour night |
|----------------------------|-----------------------------------------------------------------------------------------------|
| Negligible                 | $\geq 0$ dB and $< 3$ dB                                                                      |
| Minor                      | $\geq 3$ dB and $< 5$ dB                                                                      |
| Moderate                   | $\geq 5$ dB and $< 10$ dB                                                                     |
| Major                      | $\geq 10$ dB                                                                                  |

### 3.5. BS 4142: 2014 +A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound

British Standard BS 4142: 2014 +A1:2019 “Methods for rating and assessing industrial and commercial sound” provides a method for the measurement and rating of industrial noise or noise of an industrial nature and background noise levels outside dwellings in mixed residential and industrial areas. The rating level (defined in the BS) is used to rate the industrial noise source outside residential dwellings (this is defined as the “specific noise source”).

The procedure defined in BS 4142 for predicting the likelihood of complaints is based on establishing the difference between the rating level and the background level outside the residential property of interest. The greater the difference the greater the likelihood of complaints and more specifically:

- “A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context;
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.



- *Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.*

The guidance goes on to state that “where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.” Consequently, when considering the impact of a BS 4142 assessment, it is often also necessary to consider the absolute noise levels experienced at the receptor location in relation to BS 8233 and World Health Organisation guidelines.

### 3.6. BS 4142:2014+A1:2019 Technical Note (2020)

In March 2020, Acoustic and Noise Consultants (the ANC) published a guidance note to accompany BS 4142.

The Technical Note states “remain concerns for some users of BS 4142 and this guidance is designed to assist readers with a reasonable interpretation and application of BS 4142 as a whole”. It notes “In the production of this guidance, the ANC Working Group (WG) has reviewed BS 4142 and attempted to address any content regarded as ambiguous”. Consequently, whilst not an official guidance document, the Technical Note provides advice of the interpretation of BS 4142 and provides examples of best practice with regards to the application of the BS.

The following sub-sections contain clarifications from the Technical Note that are particularly pertinent to this assessment.



#### 3.6.1. Internal Noise Levels

The Technical Note notes “BS 4142 ‘is not intended to be applied to the assessment of indoor sound levels’ (Subclause 1.3) and cannot, therefore, be used for façade design. Whilst BS 4142 can be used to assist in the determination of the likelihood of an adverse or significant adverse impact, guidance on internal design criteria and mitigation is provided elsewhere”. The Technical Note goes on to state that in conjunction with BS 4142, the use of BS 8233 may be appropriate to determine internal noise levels “although recognition should be given to the associated scope and/or limitations”.

#### 3.6.2. Introduction of a New Noise-Sensitive Receptors

One of the major short-comings of BS 4142 is the lack of differentiation between the assessment of new noise sources verses the assessment of new noise-sensitive receptors. Subclause 8.5 of BS 4142 states “Where a new noise-sensitive receptor is introduced and there is extant industrial and/or commercial sound, it ought to be recognized that the industrial and/or commercial sound forms a component of the acoustic environment. In such circumstances other guidance and criteria in addition to or alternative to this standard can also inform the appropriateness of both introducing a new noise-sensitive receptor and the extent of required noise mitigation”.

The Technical Note clarifies this position by noting “where BS 4142 is used in this situation, its fundamental principles, in terms of what constitutes the residual, background and specific sources, should not be compromised. Where other standards or guidance document are used, care should be taken with regard to their own stated scope or limitations. Examples of such guidance might include:

- *BS8233: 2014 where an industrial/commercial sound source is constant and new residential development is proposed nearby;*
- *Elements of ProPG where the impact of regular night time maximum sound events is the critical consideration;*
- *DMRB where impacts relate solely to changes to vehicular movements within or around a site; or*
- *BS 5228 where activities are temporary and of a similar nature to the construction activities considered by that Standard.*

*These documents, or others, may help to inform the contextual elements of a BS 4142 assessment or help where a numerical assessment fully in accordance with BS 4142 may not be possible”.*

In this regard the Technical Note that when assessing new noise-sensitive receptors close to commercial noise sources, it may not be possible to use BS 4142 as difficulties in disaggregating “*legitimate commercial residual sources to the background sound level could potentially lead to unrepresentatively adverse outcomes*”. Consequently, “*alternative guidance and standards should be referenced, although care should be taken not to apply them beyond their own stated scope or limitations*”. It goes on to note that “*different approaches might be adopted depending on whether the industrial/commercial source is continuous or intermittent, whether there are ancillary sources present, or where one particular industrial/commercial premises dominates*”.

### 3.6.3. Background Sound Levels

BS 4142 does not provide a definitive method for calculating or determining a background sound level. The Technical Note does not a definitive method either, but does provide more clarification. It notes “*it was the view of the WG that it is not always appropriate to define a singular background sound level for use in an assessment. In such cases, a range of values over one or more time periods may be more appropriate. An assessment should generally focus on the sound levels measured during the period of greatest interest, which may be the quietest part of the night, or the time period relating to a complaint. Determining the period of greatest interest should be judged on a case-by-case basis*”.

The Note points out that “*it is important that the established background sound level is representative of typical conditions*”. It goes on to provide a number of examples whereby time history, histogram and cumulative distribution data is presented, along with the range of values selected by the WG as being representative. “*These examples are included to illustrate the range of views in the WG as to how best to identify representative background sound levels for particular datasets and serve to highlight the sensitivity of the outcome to individual interpretations of measurement data. It must be remembered that there are no ‘correct’ answers, only judgement and justification. In many instances, additional information beyond that presented in these examples would be required to inform the judgement of representative levels*”.

### 3.6.4. Context

The criteria used to determine the acceptability of an impact with BS 4142 talks about the requirement to consider “*context*”. However, BS 4142 does not provide much detail as to what one might consider in relation to context.

BS 4142 notes that absolute levels of sound can be of significance, where residual values are both high and low. In particular, BS 4142 notes that absolute levels may be as, or more, important than relative outcomes where background and rating levels are low, but does not provide further commentary.

The Technical Note points out that “BS 4142 does not indicate how the initial estimate of impact should be adjusted when background and rating levels are low, only that the absolute levels may be more important than the difference between the two values. It is likely that where the background and rating levels are low, the absolute levels might suggest a more acceptable outcome than would otherwise be suggested by the difference between the values. For example a situation might be considered acceptable where a rating level of 30dB is 10dB above a background sound level of 20dB, i.e. an initial estimate of a significant adverse impact is modified by the low rating and background sound levels.

There may be situations where the opposite is true, and it is for the assessor to justify any modifications to the initial estimate of impact.

BS 4142 does not define ‘low’ in the context of background sound levels nor rating levels. The note to the Scope of the 1997 version of BS 4142 defined very low background sound levels as being less than about 30 dB  $L_{A90}$ , and low rating levels as being less than about 35 dB  $L_{A,T,r}$ .

The WG suggest that similar values would not be unreasonable in the context of BS 4142, but that the assessor should make a judgement and justify it where appropriate”.

The Technical Note suggests other areas one might consider when looking at context:

- “character of a particular neighbourhood;
- former uses at or close to a site;
- legitimacy of the industrial use, e.g. planning permissions or environmental permits;
- implementation of best practicable means for a given process or activity; or
- local convention or perceptions”.

It goes on to provide two examples:

“For example; a former industrial use may be less relevant if it ceased 10 years previously, than a use that ceased within the previous six months. Setting out the context in this way is important so that the reader is fully aware of the point being made”.

“For example; a coffee shop with drive thru facility located adjacent to a fairly busy road with traffic lights and constant stop/start traffic, with residential properties nearby. In these circumstances the noise climate is unlikely to change in any perceptible way due to the addition of vehicles moving and idling in the drive thru area. However, during the evening, the gaps in the general traffic could reduce the background sound level sufficiently that an adverse or significant adverse impact is suggested. An intermittency correction could also be considered appropriate. In this example, the assessor might legitimately take the view that the context is at odds with the initial (numerical) assessment, and substantially adjust the conclusions of the assessment on the basis of the context”.

## 4. SOUND MEASUREMENT STUDY

### 4.1. Overview

In order to determine the extent to which the site is affected by sound, a detailed sound measurement study has been carried out on the proposed development site. Sound measurements have been carried out in order to determine the background sound levels for the day and night time periods.

All noise monitoring was conducted using a Norsonic 140 sound level meter, which conforms to BS EN IEC 61672-1: 2003 as a Class 1 precision measurement system. A Norsonic 1251 field calibrator was used before and after the measurement periods in order to ensure that the equipment had remained within reasonable calibration limits ( $\pm 0.5$  dB).

All of the equipment used has been calibrated in accordance with the procedures set out in BS EN IEC 61672-2: 2003 and for the electrical testing of frequency filters as set out in BS EN IEC 61260. The equipment was calibrated at Campbell Associates Limited, in Great Dunmow, Essex. Campbell Associates Limited meets the laboratory accreditation requirements of the United Kingdom Accreditation Service (UKAS Lab No. 0789). Sound level meters are laboratory calibrated every two years, with field calibrators laboratory calibrated every twelve months. **Appendix 2** summarises the equipment used including serial numbers and calibration certificates.

All noise monitoring has been conducted in accordance with the guidance set out in BS 7445-2: 1991 'Description and measurement of environmental noise Part 2: Guide to the acquisition of data pertinent to land use'. This standard details information that should be recorded in addition to the actual measured levels such as meteorological data, and a description of the noise source itself.

The background noise survey was conducted on Friday 15<sup>th</sup> and 16<sup>th</sup> August 2023. The noise monitoring was conducted by Mathew Vaughan of Hawkins Environmental Limited. Mathew is an Associate Member of the Institute of Acoustics and holds a Masters of Science in Applied Acoustics from Solent University. Additional noise measurements were undertaken of the 25<sup>th</sup> and 26<sup>th</sup> June 2024.

Weather conditions were conducive to successful monitoring. **Table 4.1** summarises the weather conditions during the measurement period.

**Table 4.1: Summary of Weather Conditions during the Sound Measurements**

|                            |                                                                                        |
|----------------------------|----------------------------------------------------------------------------------------|
| <b>General Description</b> | The measurement periods were warm, with some sunshine during the day with light winds. |
| <b>Windspeed</b>           | Over the measurement period, the average windspeed were typically less than 2 m/s.     |
| <b>Temperature</b>         | Highs of 25°C, lows of 9°C.                                                            |
| <b>Precipitation</b>       | No precipitation was observed during the measurement period.                           |

## 4.2. Background Sound Levels

BS 4142: 2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' requires the determination of background sound levels at a location representative of the potentially affected receptors.

Sound measurements were conducted at location within the proposed development site, situated away from the existing onsite activities at a location marked on **Figure 4.1**. It is considered that background noise measurements conducted at this location will be representative of the surrounding dwellings, without the contribution of the onsite noise generating activities. The sound monitoring locations were considered to be a freefield location.

Figure 4.1: Noise Measurement Location



It is proposed that the site will typically operate between 05:00-23:00 5 days per week between Monday to Friday (inclusive). Consequently, background noise measurements have been conducted over this period. The noise measurement data is detailed in **Appendix 3** and summarised in **Figure 4.2** and **Table 4.2**. Additional background noise measurements have been made towards the southern boundary of the Heron Industrial Estate site which adjoins Field View, Back Lane. The noise measurement data of noise measurement location 2 is detailed in **Appendix 3** and summarised in **Figure 4.3** and **Table 4.3**.

**Table 4.2: Summary of the Sound Level Measurements – Noise Measurement Location 1**

| Period (hours)         | Measured Facade Sound Level, dB |                           |                            |                           |
|------------------------|---------------------------------|---------------------------|----------------------------|---------------------------|
|                        | $L_{Aeq.T}$                     | Range<br>$L_{Aeq.15mins}$ | Range<br>$L_{Amax.15mins}$ | Range<br>$L_{A90.15mins}$ |
| Daytime 7am to 11pm    | 60.6                            | 53.5 – 65.4               | 71.5 – 86.7                | 33.8 – 49.8               |
| Night-time 11pm to 7am | 51.4                            | 32.8 – 60.3               | 40.1 – 76.2                | 28.5 – 48.4               |

**Table 4.3: Summary of the Sound Level Measurements – Noise Measurement Location 2**

| Period (hours)         | Measured Facade Sound Level, dB |                           |                            |                           |
|------------------------|---------------------------------|---------------------------|----------------------------|---------------------------|
|                        | $L_{Aeq.T}$                     | Range<br>$L_{Aeq.15mins}$ | Range<br>$L_{Amax.15mins}$ | Range<br>$L_{A90.15mins}$ |
| Daytime 7am to 11pm    | 45.8                            | 32.9 – 53.8               | 45.6 – 82.9                | 28.5 – 43.0               |
| Night-time 11pm to 7am | 45.6                            | 31.0 – 50.1               | 42.7 – 72.2                | 27.2 – 42.8               |

The background sound levels have been calculated in accordance with BS 4142:2014, which represents the most up-to-date guidance on the subject. Prior to the publication of the 2014 version of BS 4142, acousticians would use the lowest measured background sound levels; however, BS 4142: 2104 provides substantially more guidance on the determination of background sound levels. Section 8.1 of BS 4142: 2014 states that “*for this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods. Among other considerations, diurnal patterns can have a major influence on background sound levels and, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night-time period for sleep purposes*”. The guidance goes on to say that “*a representative level ought to account for the range of background sound levels and ought not automatically to be assumed to be either the minimum or modal value*”.

In order to determine the background sound levels for the daytime periods, the background sound levels have been analysed over the appropriate time periods, i.e. 1 hour for daytime and 15 minutes for night-time. **Figure 4.4**, **Figure 4.5**, **Figure 4.6** and **Figure 4.7** details the distribution of the background sound levels as described in BS 4142: 2014 for the daytime period for both measurement locations. As the proposed scheme sees the extension of hours between 7pm and 11pm as well as 5am and 7am, background sound levels have therefore

been assessed for the evening period between 7pm and 11pm and the night-time period between 5am and 7am.

At measurement location 1, it can be seen from **Figure 4.4** that during the evening extended operating hours, the  $L_{A90,1\text{hour}}$  ranged from 35 dB to 41 dB. There are no particular number of occurrences which are in excess of another and as such, the lowest value of 35 dB is considered the evening background noise level at measurement location 1.

It can be seen from **Figure 4.5** that during the night-time hours between 5am and 7am at measurement location 1, the  $L_{A90,15\text{mins}}$  ranged from 36 dB to 48 dB, with the largest number at 39 dB. To characterise a worst-case scenario in terms of night-time background noise levels, it is considered that 39 dB is the night-time background noise level between 5am and 7am at measurement location 1.

At measurement location 2, it can be seen from **Figure 4.6** that during the evening extended operating hours, the  $L_{A90,1\text{hour}}$  ranged from 29 dB to 35 dB. There are no particular number of occurrences which are in excess of another and as such, the lowest value of 29 dB is considered the evening background noise level at measurement location 2.

It can be seen from **Figure 4.7** that during the night-time hours between 5am and 7am at measurement location 2, the  $L_{A90,15\text{mins}}$  ranged from 41 dB to 43 dB, with the largest number at 42 dB. To characterise a worst-case scenario in terms of night-time background noise levels, it is considered that 42 dB is the night-time background noise level between 5am and 7am at measurement location 2.

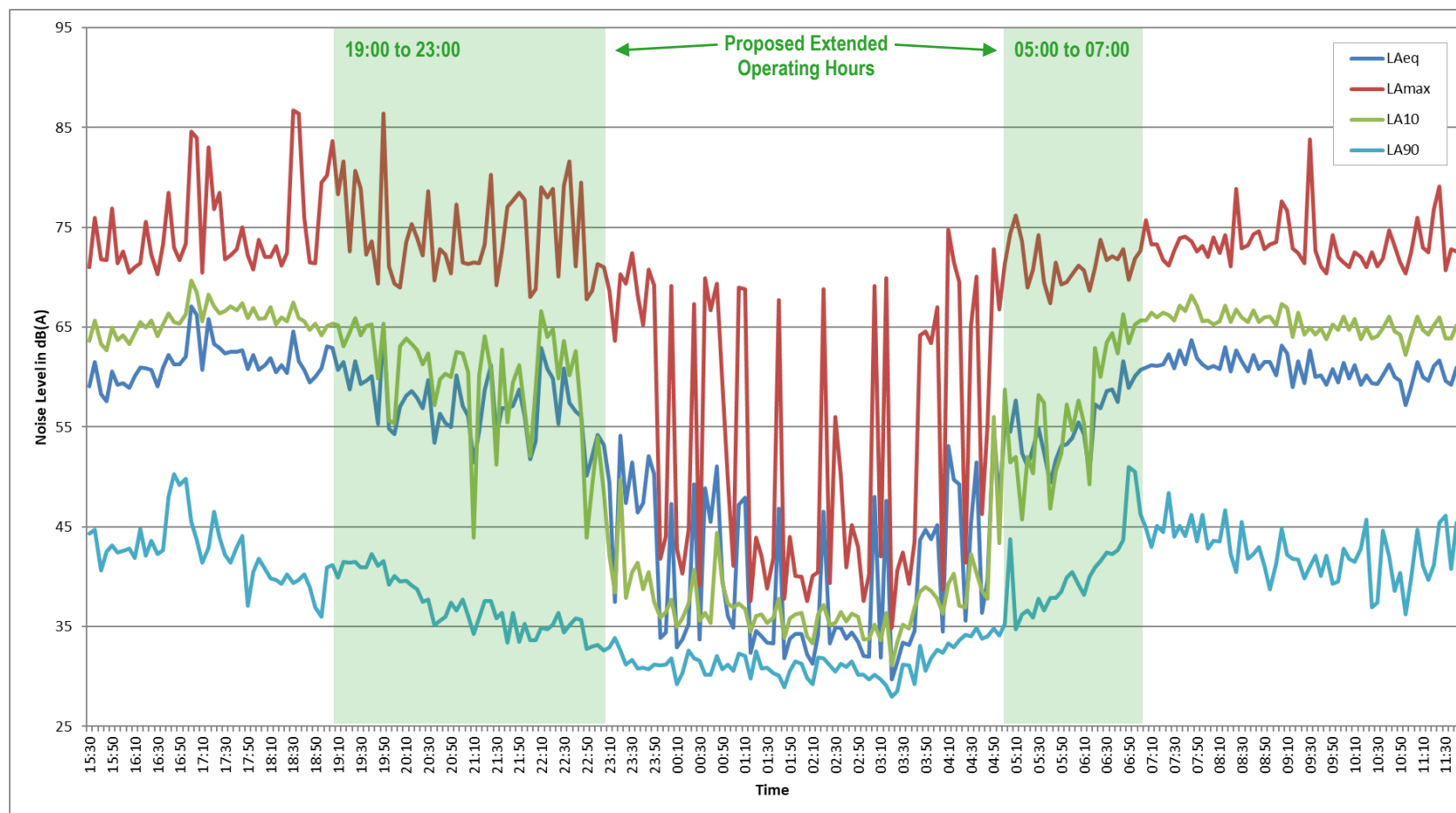
It can therefore be concluded that background noise levels are higher in the extended night time period between 5am and 7am, than they are during the evening time from 7pm to 11pm.

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Figure 4.2: Noise Measurements – Location 1

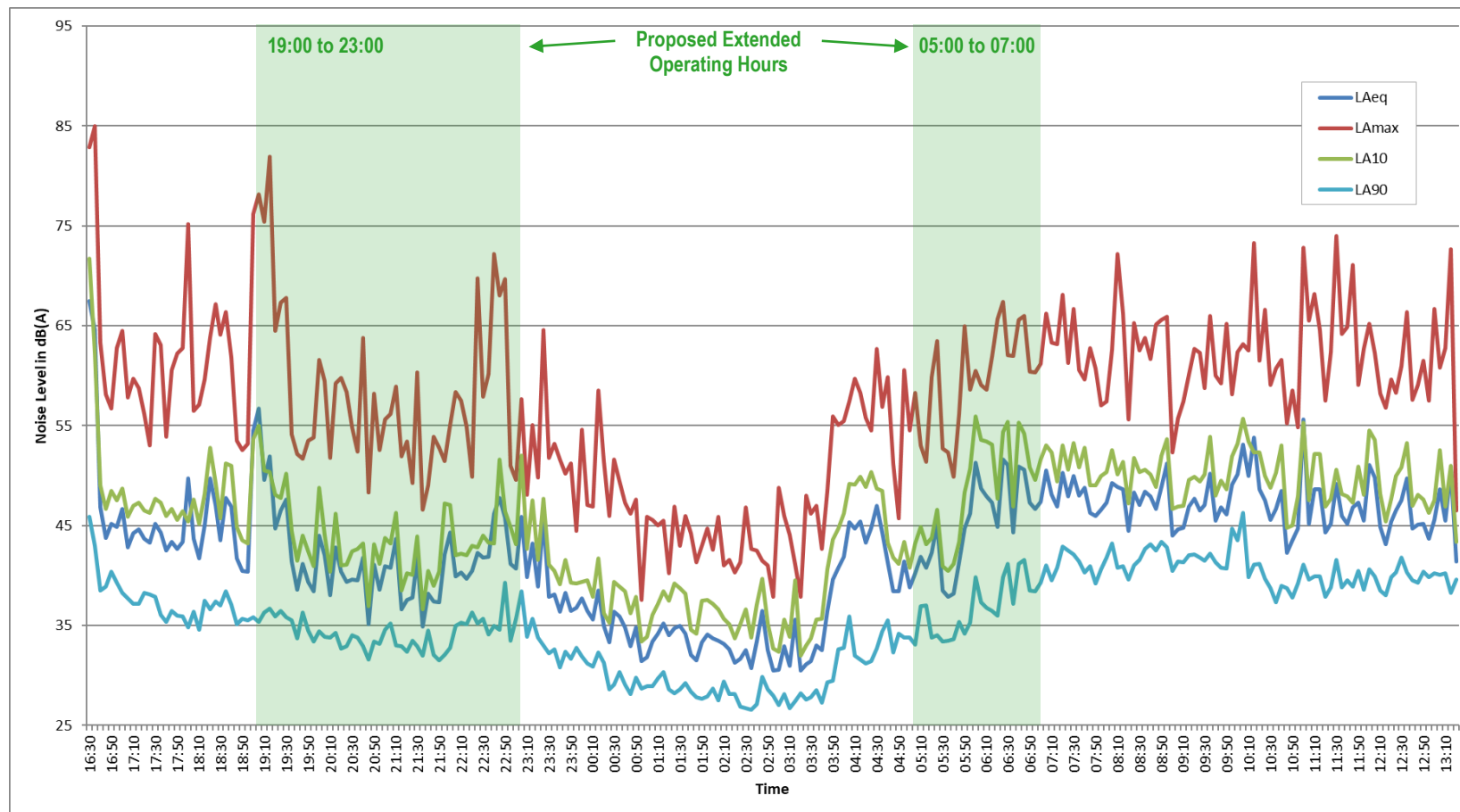


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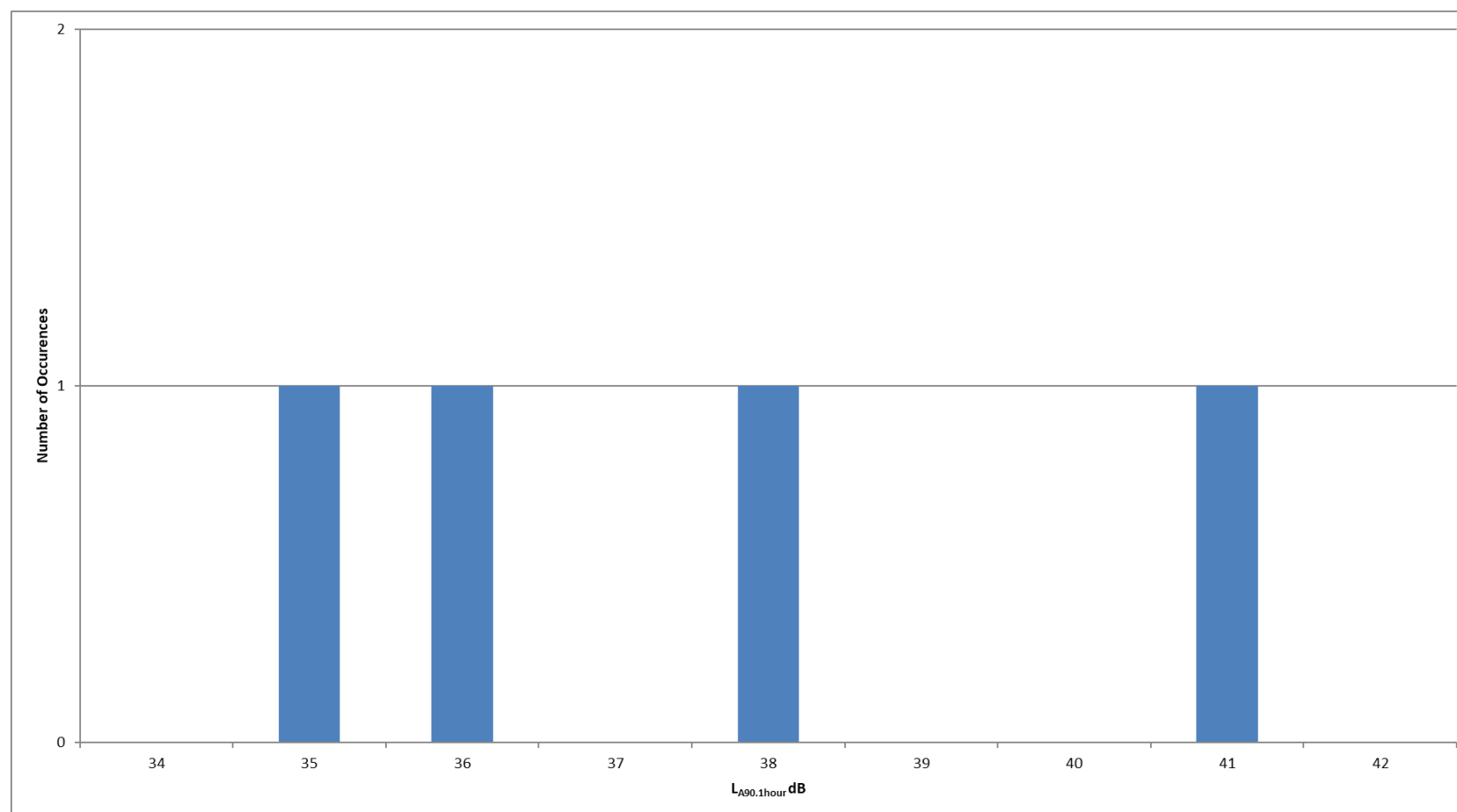
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Figure 4.3: Noise Measurements – Location 2



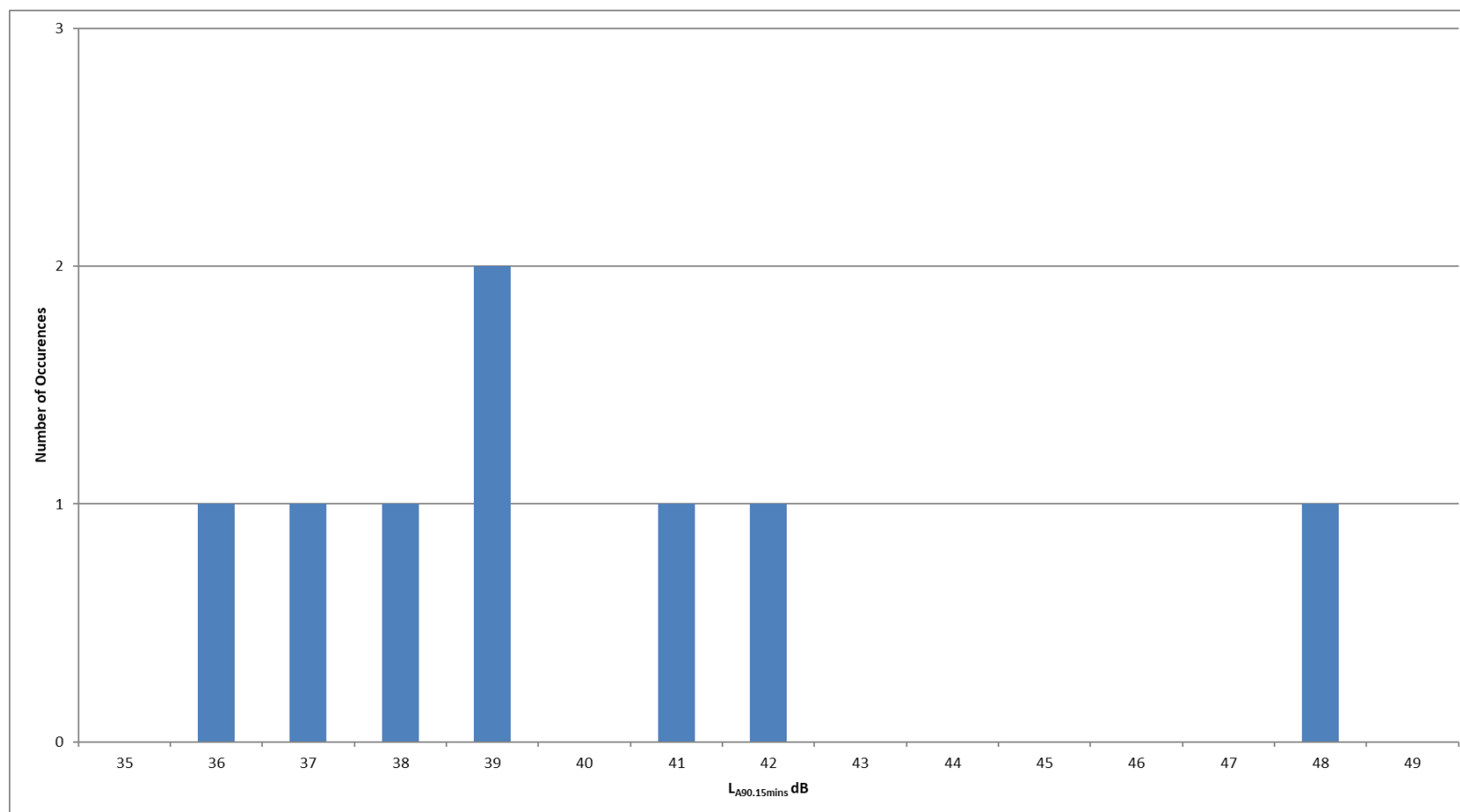
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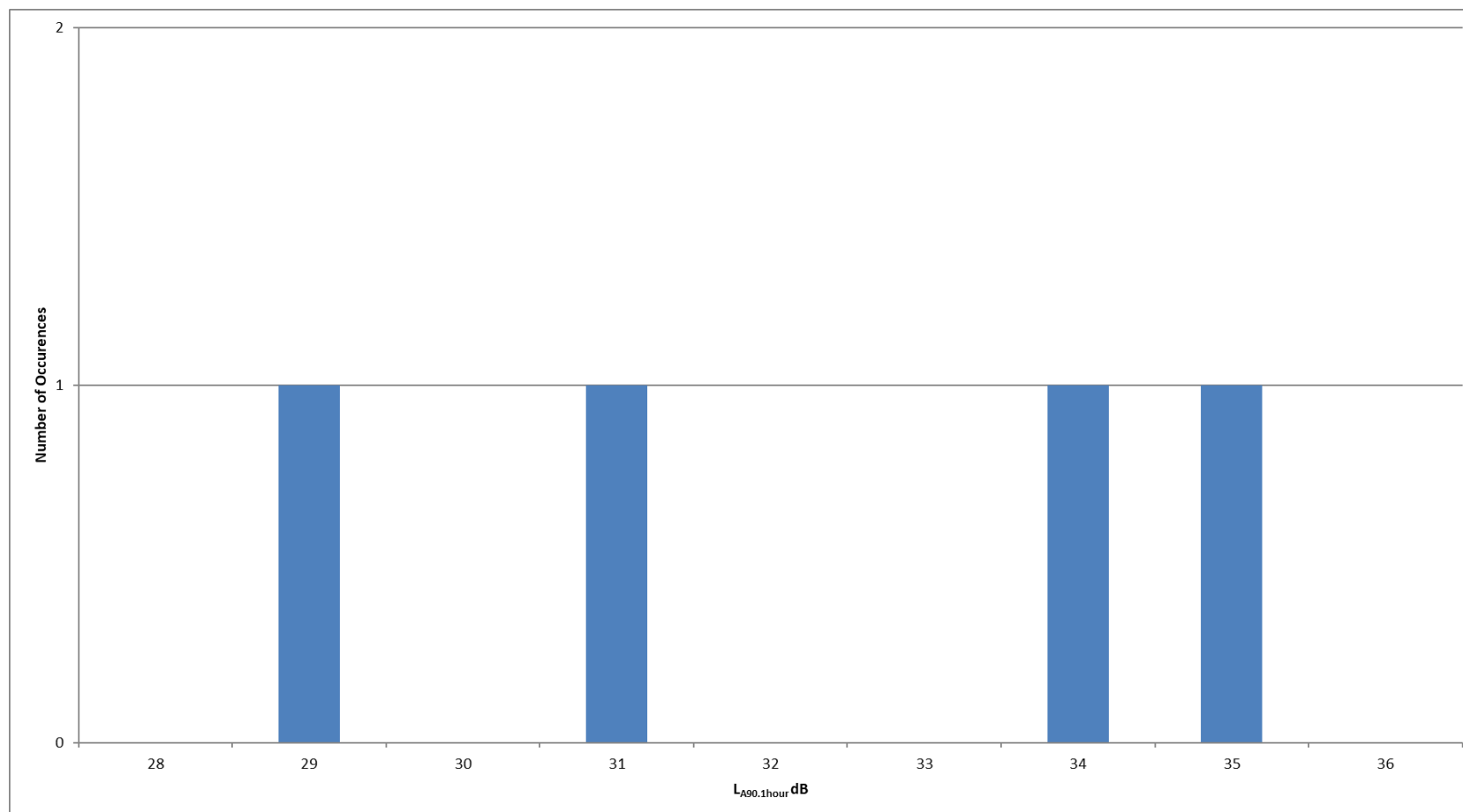
## Acoustic Impact Assessment:

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Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4Figure 4.5: Distribution of Night-time  $L_{A90.15mins}$  Sound Levels – Location 1

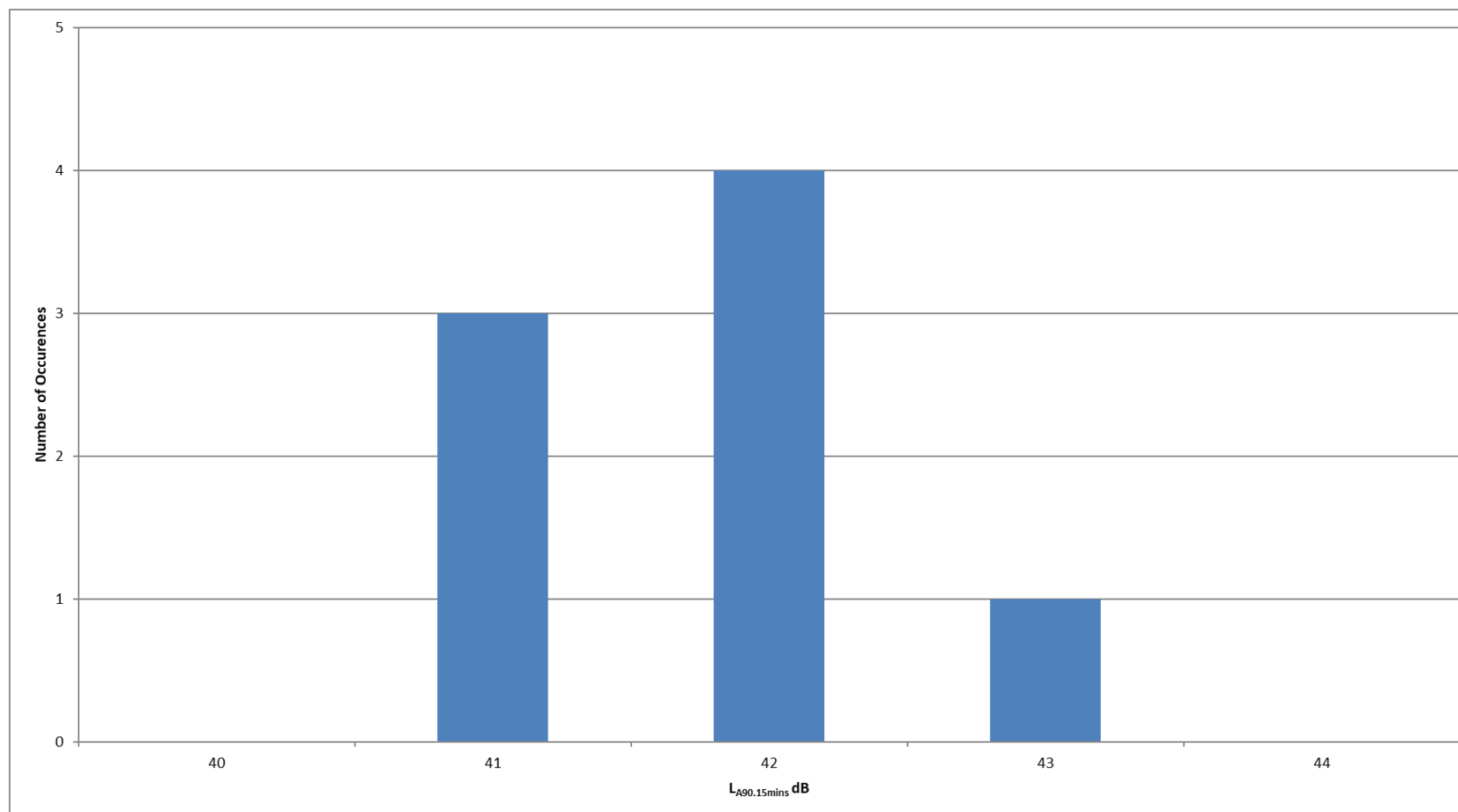
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Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4**Figure 4.6: Distribution of Evening  $L_{A90,1\text{hour}}$  Sound Levels – Location 2**

## Acoustic Impact Assessment:

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Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4Figure 4.7: Distribution of Night-time  $L_{A90.15\text{mins}}$  Sound Levels – Location 2

## 5. IMPACT OF THE SITE

### 5.1. Overview

The assessment is carried out in accordance with BS 4142:2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*' and the 2014 IEMA "*Guidelines for Environmental Noise Impact Assessment*".

### 5.2. Onsite Activities and Plant

Based on a site visit on the 12<sup>th</sup> January 2024 and a briefing from Holmes Dodsworth on their extended operational hours requirements, onsite working practices have been identified and noise from a number of onsite activities have been characterised.

At present Holme Dodsworth Metals receives a delivery of metal products in the morning from their northern manufacturing facility, typically with up to 10 tonnes of metal. At present these deliveries only occur between 7am and 7pm. It is proposed that Holme Dodsworth Metals will start a second shift, with an additional delivery occurring outside of the current period of operation. Consequently, Holme Dodsworth Metals wish to see the extension of their present activities, so that they could occur between 5am and 11pm.

Based on discussions with Robert Mutch, the Regional Director (South) of Holmes Dodsworth, it is understood that the following activities would generally occur outside their current working hours:

- From 5pm onwards, approximately 6 lorries would arrive and goods will be loaded on to them via forklift, then depart.
- After 9pm a single lorry would arrive from Holmes Dodsworth Midlands facility. It would be driven into the warehouse and the shutters then closed and left until morning.
- Between 5am and 7am, the lorry would be unloaded using a forklift. The lorry would then exit the premises.

It was possible to observe the likely early morning and evening operations by observing the existing daytime operations and delivery.

During the proposed extended hours, other than general noise from within the warehouse, the only significant source of noise would be in relation to deliveries. During a delivery, the shutters are opened and the lorry pulls straight into the warehouse and turns its engine off. Metal products are then unloaded (or loaded) using a single Still X80-20 LPG powered forklift which features a sound power level of 101 dB(A). Once one side of the lorry is unloaded (or loaded), the lorry would pull out of the warehouse and complete a 180 degree turn and then pull into the warehouse where the other side is unloaded. Once unloaded/loaded, the lorry leaves the site and the shutters are then closed. **Table 5.1** below provides a summary of the observed activities and their noise levels and percentage on-times used within the NoiseMap 5 model.

Table 5.1: NM5 Noise Source Sound Levels

| Source | Unit 7/8 Activity                                  | Sound Level<br>dB L <sub>Aeq,T</sub> at 10m | % on-time |
|--------|----------------------------------------------------|---------------------------------------------|-----------|
| 1      | Opening/closing HGV curtains                       | 58.6                                        | 2         |
| 2      | Loading/Unloading – when forklift is operating     | 59.2                                        | 50        |
| 3      | Loading/Unloading – no distant forklifts operating | 54.3                                        | 40        |
| 4      | Shutter                                            | 66.5                                        | 6         |
| 5      | HGV Idling                                         | 63.7                                        | 2         |
| 6      | HGV Drive-by                                       | 71.6 L <sub>Amax</sub>                      | -         |

Additionally, as well as deliveries, some items of plant were observed in use within Holme Dodsworth Metals, specifically saws used to cut the metal. It is understood that these items of plant **would not** be used at night between 5am and 7am or 7pm to 11pm. It is understood that the proposed extended operations would not generate any notable levels of noise, other than the HGV deliveries to the premises.

When considering the operations within the warehouse, inclusive of plant noise, at 10m from the shutters to the unit, the site is estimated to generate a sound pressure level of 59.3 dB(A). Along the windows towards the south of the east (front) façade of the unit, additional plant noise was observed with a sound pressure level of 39.8 dB(A).

### 5.3. NoiseMap5 Model

#### 5.3.1. Establishment of Receptor Specific Sound Levels

Based on the noise measurements, a noise model has been constructed to determine how noise levels vary across the proposed development site. The noise model was constructed using the NoiseMap 5 noise modelling software. The NoiseMap 5 software utilises the prediction methodology contained within BS 5228-1:2009+A1:2014.

BS 5228 contains a procedure for predicting noise levels at a distance from an item of plant, taking into account parameters such as flow rate, percentage on-time and speed (if applicable) as well as the sound power level, L<sub>Amax</sub> or L<sub>Aeq</sub> at 10 metres. The propagation model also takes into account the effect of any intervening noise barriers and buildings and the effect of reflecting surfaces.

**Figure 5.1** shows the location of 2 receptors at which noise levels were predicted during the day and night-time. **Table 5.1** summarises these results at each location. **Table 5.2** summarises the free-field specific noise level result at the closest receptor. **Figure 5.2** shows the predicted noise contours.

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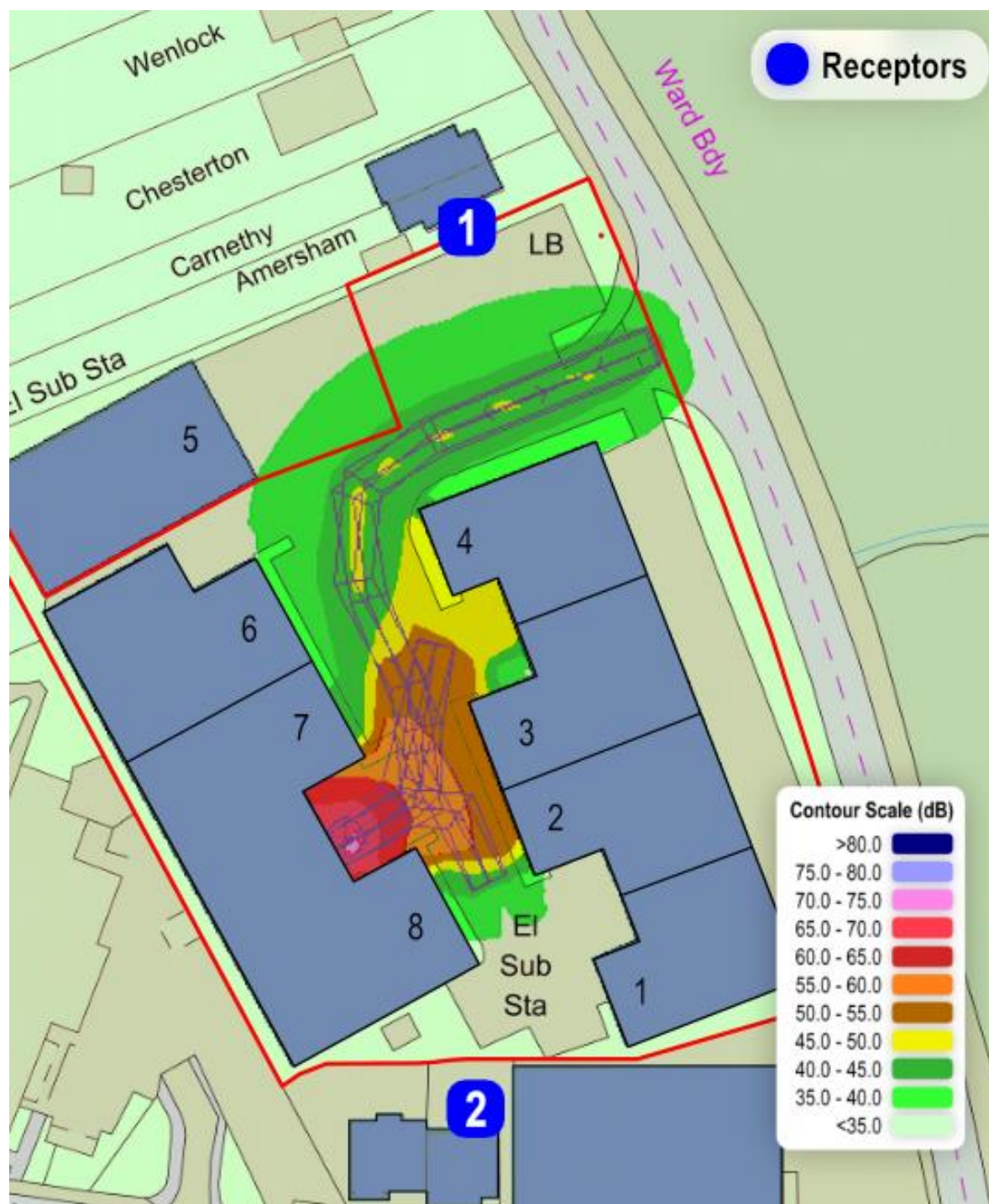
Table 5.2: Receptor Specific Sound Levels

| Location                   | Freefield Specific Sound Level in dB(A) |                          |
|----------------------------|-----------------------------------------|--------------------------|
|                            | Deliveries and Internal Operations      | Internal Operations Only |
| Amersham, Basingstoke Road | 31.1                                    | 25.4                     |
| Field View, Back Lane      | 26.3                                    | 21.4                     |

Figure 5.1: Location of Noise Receptors



Figure 5.2: Noise Model Contours – Proposed Site Layout – Deliveries and Internal Operations



## 5.4. Rating Sound Level

Using the locations of the onsite activities and based on the measured noise levels, the noise level from the industrial estate has been calculated for the nearest two dwellings: Amersham, Basingstoke Road; and, Field View, Back Lane. **Figure 5.1** shows the location of the closest receptors.

**Table 5.2** shows the calculated sound levels for this locations based on the prediction methodology within BS 5228-1:2009+A1:2014. In accordance with Section 9 of BS 4142, the rating sound level is calculated by applying a character correction to the calculated receiver sound level. For this assessment, the character correction was specified using the “Subjective Method”, where it is necessary to “*consider the subjective prominence of the character of the specific sound at the noise-sensitive locations and the extent to which such acoustically distinguishing characteristics will attract attention.*”

BS 4142 goes on to highlight the subjective correction that one could apply; these corrections are summarised in **Table 5.3** below:

**Table 5.3: Subjective Character Corrections**

| Category                    | Comments                                                                                                                                                                                                        |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tonality                    | “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 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.” |
| Intermittency               | “If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.”                                                                                      |

At the locations of the nearest noise sensitive receptors, it has been observed that onsite noise is variable with an element of impulsive noise. It has been observed that there is no intermittency with onsite noise generating activities. Consequently, a 3 dB impulsivity penalty is applied to all specific sound levels to determine the rating sound level. **Table 5.4** determines the rating sound levels at the receptor locations.

**Table 5.4: Receptor Rating Sound Levels**

| Location                   | Freefield Rating Sound Level in dB(A) |
|----------------------------|---------------------------------------|
| Amersham, Basingstoke Road | 34                                    |
| Field View, Back Lane      | 29                                    |

## 5.5. Adherence to Sound Criteria

To assess the impact of the proposed plant, the predicted sound levels have been compared to the criteria in BS 4142. **Table 5.5** below considers the sound levels in a BS 4142 assessment during the period when the plant will be operational. In a BS 4142 assessment, the 'industrial' sound is rated by comparison against the background sound level. The difference between the rating sound level and lowest background sound level gives an indication of the likelihood of complaint. The evening period featured the lowest background sound levels of 35 dB and 29 dB for measurement location 1 and measurement location 2 respectively.

**Table 5.5: BS 4142 Assessment**

|                               | Background<br>Sound Level<br>$L_{A90}$ | Specific<br>Sound Level<br>$L_{Aeq}$ | Rating Sound<br>Level<br>$L_{Aeq}$ | Difference between Rating<br>Level and Background<br>Sound Level |
|-------------------------------|----------------------------------------|--------------------------------------|------------------------------------|------------------------------------------------------------------|
| Amersham,<br>Basingstoke Road | 35                                     | 31                                   | 34                                 | -1                                                               |
| Field View, Back<br>Lane      | 29                                     | 26                                   | 29                                 | 0                                                                |

**Note:** All sound levels are freefield sound measurements. The background sound levels are representative of the nearest noise measurement locations to the receptors (i.e. Amersham, Basingstoke Road utilises the background sound level derived from Noise Measurement Location 1 data, whereas Field View, Back Lane uses the background sound level derived from the Noise Measurement Location 2 data).

BS 4142: 2014 suggests that *"The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context"*. Consequently, it is possible to conclude that unmitigated, the extension of the operational hours would be representative of a low impact. This is a positive indication that complaints are unlikely. During periods which deliveries do not occur, the rating sound level is reduced by approximately 5 dB.

A Noise Management Plan ("NMP") is recommended to ensure that deliveries are carried out in a manner which is conducive to minimising and mitigating noise from the proposed extended operating hours. This will ensure that the delivery process and subsequently the noise emissions from these activities are controlled. The Noise Management Plan for this site is presented in **Appendix 4**. It is anticipated that this NMP could be secured by condition.

## 6. OVERALL CONCLUSIONS AND RECOMMENDATIONS

A detailed sound measurement study has been carried out to determine whether units 7-8 of Heron Industrial Estate could extend its operating hours from 7am to 7pm, to between 5am and 11pm for each working day between Monday and Friday (inclusive) and whether this is likely to be acceptable in terms of noise and whether complaints are likely.

Using the guidance and calculation methods contained within BS 4142:2014+A1:2019 '*Methods for rating and assessing industrial and commercial sound*', the rating sound level has been calculated to be below the background sound level.

Notwithstanding the above, it has been recommended that the occupiers of Units 7 and 8 should adhere to a Noise Management Plan. This will provide a procedure that employees can follow to minimise and mitigate potential impacts of noise on the nearest noise sensitive receptors during the most sensitive times during the proposed extended operating hours. This will ensure that the delivery process is controlled such that complaints of noise would be unlikely. The Noise Management Plan for this site is presented in **Appendix 4**.

Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

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## **Appendix 1**

### **Glossary of Acoustic Terms**

## Appendix 1: Glossary of Acoustic Terms

|                |                                                                                                                                                                                                                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Decibel (dB)   | This is a tenth (deci) of a bel. Decibel can be a measure of the magnitude of sound, changes in sound level and a measure of sound insulation. Decibels are not an absolute unit of measurement but are an expression of the ratio between two quantities expressed in logarithmic form.                             |
| dB(A)          | A-weighted decibels, i.e. decibel level incorporating a frequency weighting (A-weighting), which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness.                                           |
| Freefield      | A situation in which the radiation from a sound source is completely unaffected by the presence of any reflecting boundaries.                                                                                                                                                                                        |
| Hertz (Hz)     | Unit of frequency, equal to one cycle per second. The frequency of sound waves refers to the number of pressure fluctuations per second. Frequency is related to the pitch of a sound.                                                                                                                               |
| $L_{Aeq,T}$    | The equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over the given period, T. For example, daytime noise is generally measured over a 16 hour period, so T is 16 hours. $L_{Aeq,T}$ can be measured directly with an integrating sound level meter. |
| $L_{A10}$      | The 'A'-weighted sound pressure level of the residual noise in decibels exceeded for 10 percent of a given time and is the $L_{A10,T}$ . The $L_{A10}$ is used to describe the levels of road traffic noise at a particular location.                                                                                |
| $L_{A50}$      | The 'A'-weighted sound pressure level of the residual noise in decibels exceeded for 50 percent of a given time and is the $L_{A50,T}$ .                                                                                                                                                                             |
| $L_{A90}$      | The 'A'-weighted sound pressure level of the residual noise in decibels exceeded for 90 percent of a given time and is the $L_{A90,T}$ . The $L_{A90}$ is used to describe the background noise levels at a particular location.                                                                                     |
| $L_{Amax}$     | The 'A'-weighted maximum sound pressure level measured over a measurement period.                                                                                                                                                                                                                                    |
| $R_w$ (or SRI) | The weighted sound reduction index as a single number laboratory measured rating used to describe the sound insulation of building elements.                                                                                                                                                                         |

Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

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## Appendix 2 Schedule of Equipment

Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

## Appendix 2: Schedule of Equipment

### Equipment Set 3056:

| Equipment Type                   | Manufacturer  | Serial Number  | Calibration Certification Number | Calibration Type       | Date of Last Calibration Check | Date of Next Calibration Check |
|----------------------------------|---------------|----------------|----------------------------------|------------------------|--------------------------------|--------------------------------|
| Nor-140 Type 1 Sound Level Meter | Norsonic      | 1403056        | U42312                           | UKAS Calibration: 0789 | 2 <sup>nd</sup> November 2022  | November 2024                  |
| Nor-1209 Pre-amplifier           | Norsonic      | 12528          | U42312                           | UKAS Calibration: 0789 | 2 <sup>nd</sup> November 2022  | November 2024                  |
| Nor-1225 Microphone              | Norsonic      | 98361          | 42311                            | UKAS Calibration: 0789 | 2 <sup>nd</sup> November 2022  | November 2024                  |
| Nor-1255 Sound Calibrator        | Norsonic      | 25262          | U42310                           | UKAS Calibration: 0789 | 2 <sup>nd</sup> November 2022  | November 2023                  |
| Nor-1284 Dehumidifier            | Norsonic      | 222            | Not Applicable                   |                        |                                |                                |
| Nor- 1212 Weather Protection Kit | Norsonic      | Not Applicable |                                  |                        |                                |                                |
| Nor1408A/5 Extension Cable       | Norsonic/Lemo | Not Applicable |                                  |                        |                                |                                |

## Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

## Laboratory Location

**Campbell Associates Ltd**  
 5b Chelmsford Road Industrial Estate  
 GREAT DUNMOW, Essex, GB-CM6 1HD  
 Phone 01371 871030

**Certificate of Calibration and Conformance**Certificate number: **U42312**Test Object: **Sound Level Meter, BS EN IEC 61672-1:2003 Class 1**

Producer: **Norsonic AS.**  
 Type: **140**  
 Serial number: **1403056**  
 Customer: **Hawkins Environmental**  
 Address: **The Square, Basing View,  
 Basingstoke, Hampshire, RG21 4EB**  
 Contact Person: **Nick Hawkins**  
 Order No: **TBC**

**Introduction:**

Calibration has been performed as set out in CA Technical Procedures which are based on the procedures for periodic verification of sound level meters as per the Test Object listed above. Results and conformance statement are overleaf and detailed results, where appropriate, are provided in the attached Measurement Report.

| Tested:      | Producer | Type | Serial No | Certificate No |
|--------------|----------|------|-----------|----------------|
| Microphone   | Norsonic | 1225 | 98361     | 42311          |
| Calibrator*  | Norsonic | 1255 | 125525262 | U42310         |
| Preamplifier | Norsonic | 1209 | 12528     | Included       |

\* The calibrator was complete with any required coupler for the microphone specified.

**Additional items that have also been submitted for verification:**

Wind shield N/A  
 Attenuator N/A  
 Extension cable N/A

These items have been taken into account wherever appropriate.

Instruction Manual: Im140\_1Ed8R0En Firmware Version: 2.1.670 The test object is a single channel instrument.

| Conditions             | Pressure kPa | Temperature °C | Humidity %RH |
|------------------------|--------------|----------------|--------------|
| Reference conditions   | 101.325      | 23             | 50           |
| Measurement conditions | 100.82 ±0.08 | 23.40 ±0.2     | 47.98 ±0.2   |

**Calibration Dates:**

Received date: 24/10/2022 Reviewed date: 03/11/2022  
 Calibration date: 02/11/2022 Issued date: 03/11/2022

**Technicians: (Electronic certificate)**

Calibrated by: *Katie Brown*

Reviewed by: *Jenny Crawford*

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Doc ref: Sim-Cert-Master-V3-05

**Certificate of Calibration and Conformance**

Continuation of Certificate number: U42312

The statements of conformance and observation notes detailed in this certificate are made with reference to the following standards in respect of the calibration of the test object.

|                     |                        |
|---------------------|------------------------|
| Manufactured:       | BS EN IEC 61672-1:2003 |
| Periodic Tests:     | BS EN IEC 61672-3:2006 |
| Pattern Evaluation: | BS EN IEC 61672-2:2003 |

**Conformance:**

From markings on the sound level meter or by reference to the manufacturer's published literature it has been determined that the instrument submitted for verification was originally manufactured to the listed standard and similarly that the associated sound calibrator conforms to the BS EN IEC 60942 standard.

**Measurement Summary:**

|                                                                         |        |
|-------------------------------------------------------------------------|--------|
| Indication at the calibration check frequency - IEC61672-3 Ed.1 #9      | Passed |
| Self-generated noise - IEC 61672-3 Ed.1 #10.2                           | Passed |
| Acoustical signal tests of a frequency weighting - IEC 61672-3 Ed.1 #11 | Passed |
| Electrical signal tests of frequency weightings - IEC 61672-3 Ed.1 #12  | Passed |
| Frequency weightings: A Network - IEC 61672-3 Ed.1 #12.3                | Passed |
| Frequency weightings: C Network - IEC 61672-3 Ed.1 #12.3                | Passed |
| Frequency weightings: Z Network - IEC 61672-3 Ed.1 #12.3                | Passed |
| Frequency and time weightings at 1 kHz IEC 61672-3 Ed.1 #13             | Passed |
| Level linearity on the reference level range - IEC 61672-3 Ed.1 #14     | Passed |
| Toneburst response - IEC 61672-3 Ed.1 #16                               | Passed |
| Peak C sound level - IEC 61672-3 Ed.1 #17                               | Passed |
| Overload indication - IEC 61672-3 Ed.1 #18                              | Passed |

**Comments**

Correct level with associated calibrator is 113.9dB(A). Actual measured microphone response has been used for the determination of the combined acoustic and electrical frequency response.

**Statement of Conformance**

The sound level meter submitted has successfully completed the periodic tests of the standard listed for the environmental conditions under which the tests were performed. As public evidence(1) was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with the manufacturer's standard to demonstrate that the model of sound level meter fully conformed to the requirements of the said standard, the sound level meter submitted for testing conforms to the relevant class of the said standard.

(1 - evidence is held on file at the calibration laboratory)

**Observations**

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor  $k = 2$ , providing a coverage probability of approximately 95 %. The uncertainty evaluation has been carried out in accordance with UKAS requirements. Details of the uncertainty for each measurement are available from the Calibration Laboratory upon request. Details of the sources of corrections and their associated uncertainties that relate to this verification are contained within the test report accompanying this certificate.

**Decision Rule**

Basic Meter Function - The decision rules will be applied in accordance with the procedure as described in BS EN 61672-3:2006.

This certificate relates only to the items tested above.

\*\* End of Certificate \*\*

## Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

## Laboratory Location

**Campbell Associates Ltd**5b Chelmsford Road Industrial Estate  
GREAT DUNMOW, Essex, GB-CM6 1HD  
Phone 01371 871030**Certificate of Calibration**Certificate number: **42311**Test Object: **Measurement Microphone**

Producer: **Norsonic AS.**  
 Type: **1225**  
 Serial number: **98361**  
 Customer: **Hawkins Environmental**  
 Address: **The Square, Basing View,  
Basingstoke, Hampshire, RG21 4EB**  
 Contact Person: **Nick Hawkins**  
 Order No: **TBC**

| Measurement Results   | Sensitivity<br>(dB re 1V/Pa) | Sensitivity<br>(mV/Pa) | Capacitance<br>(pF) |
|-----------------------|------------------------------|------------------------|---------------------|
| Measurement 1         | -25.95                       | 50.39                  | 26.46               |
| Measurement 2         | -25.97                       | 50.32                  | 26.44               |
| Measurement 3         | -25.96                       | 50.32                  | 26.40               |
| Result (Average):     | <b>-25.96</b>                | <b>50.34</b>           | <b>26.43</b>        |
| Expanded Uncertainty: | 0.10                         |                        | 2.00                |
| Degree of Freedom:    | >100                         |                        | >100                |
| Coverage Factor:      | 2                            |                        | 2                   |

The stated sensitivity is the pressure sensitivity at 250Hz, S250, and is valid at reference conditions. The following correction factors have been applied during the measurement:

Pressure: uncertainty dB/kPa Temperature: -0.005 dB/°C Humidity: 0 dB/%RH

| Conditions             | Pressure kPa    | Temperature °C | Humidity %RH |
|------------------------|-----------------|----------------|--------------|
| Reference conditions   | 101.325         | 23             | 50           |
| Measurement conditions | 100.988 ± 0.042 | 22.9 ± 0.1     | 48.7 ± 0.8   |

The calibration test report shown on the next page gives details of the response at other frequencies relative to this 250 Hz reference sensitivity. Results ≥ 100 Hz are obtained using an electrostatic actuator as described in BS EN 61094-8 and those below 100 Hz are obtained in a reference pressure chamber. Detailed results are available from the calibration laboratory upon request.

The reported expanded uncertainty of measurements is based on a standard uncertainty multiplied by the coverage factor of k=2, providing a coverage probability of approximately 95%. Where the degrees of freedom are insufficient to maintain this confidence level, the coverage factor is increased to maintain this confidence level.

## Calibration Dates:

Received date: 24/10/2022      Reviewed date: 03/11/2022  
 Calibration date: 02/11/2022      Issued date: 03/11/2022

## Technicians: (Electronic certificate)

Calibrated by: *Katie Brown*  
 Reviewed by: *Jenny Crawford*

This certificate is issued in accordance with the CA Quality Management system. It provides traceability of measurement to recognized national standards, and to the units of measurement realized at the National Physical Laboratory or other recognized national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Doc ref: Mic-Cert-Master-V3-04

## Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4**Certificate of Calibration**

Continuation of Certificate number: 42311

Reference Calibrator: WSC11 - Nor-1253.26672

Measurement Record: K:\C A\Calibration\Nor-1504\Nor-1017 MicCal\NOR1225\_98361\_M1.nmf

**Preconditioning**

The equipment was preconditioned for more than 12 hours at the specified calibration temperature and humidity.

**Instruments and Program**

A complete list of instruments, hardware and software that have been used for this calibration is available from the calibration laboratory

**Traceability**

The measured values for sound pressure, frequency, voltage, capacitance, temperature, humidity and ambient pressure are traceable to an accredited national physical laboratory.

**Observations**

The differences between the two results at 100 Hz are within normal limits bearing in mind the different test methods and are taken into account in arriving at the uncertainties of measurement.

**Method of Calibration**

The open circuit sensitivity of the microphone has been determined at 250 Hz against a reference laboratory standard measurement microphone by insert voltage techniques using a laboratory standard sound calibrator as a transfer standard. The electrostatic actuator frequency response was then obtained for frequencies above 100 Hz as described in BS EN IEC 61094-6. In addition, where requested the optional free field frequency response over the range 2 – 100 Hz has been obtained using a pressure chamber; in this case the reference frequency is 100 Hz. All of these results and their associated uncertainties are detailed in the table on page 3 of this certificate. See the observations field below for details of any discrepancies between the 100 Hz results obtained via the electrostatic actuator and pressure chamber.

The overall uncertainty at any frequency  $\sigma_{\text{Combined},Fn}$  may be obtained by combining the uncertainty of the open circuit sensitivity  $\sigma_{S250}$  with the uncertainty of the actuator / or LF pressure response at any other frequency  $\sigma_{\text{Act},Fn}$  where  $Fn$  is the uncertainty at the frequency of interest using the relationship:

$$\sigma_{\text{Combined},Fn} = 2 \cdot \sqrt{(\sigma_{S250}^2 + \sigma_{\text{Act},Fn}^2)}$$

**Appendix to this certificate**

Where data is available from the microphone manufacturer to correct the actuator / pressure frequency response to obtain the random incidence and / or free field response it is shown in the appendix to this certificate. The uncertainty information relating to these corrections is the responsibility of the microphone manufacturer and when it is available the total uncertainty for the corrected frequency response at each point may then be obtained by including the correction uncertainty in the root-sum-square formula given above. These responses are outside the UKAS accredited scope, but are provided for information.

**Observations****Certificate of Calibration**

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## Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

## Laboratory Location

**Campbell Associates Ltd**5b Chelmsford Road Industrial Estate  
GREAT DUNMOW, Essex, GB-CM6 1HD  
Phone 01371 871030**Certificate of Calibration and Conformance**Certificate number: **U46043**Test Object: **Sound Calibrator**

Producer: **Norsonic AS.**  
 Type: **1255**  
 Serial number: **125525262**  
 Customer: **Hawkins Environmental**  
 Address: **The Square, Basing View, Basingstoke,**  
**Hampshire. RG21 4EB.**  
 Contact Person: **Nick Hawkins.**  
 Order No: **H8965**

| Measurement Results   | Level<br>dB | Level Stability<br>dB | Frequency<br>Hz | Distortion<br>% |
|-----------------------|-------------|-----------------------|-----------------|-----------------|
| Measurement 1         | 114.04      | 0.01                  | 999.99          | 0.36            |
| Measurement 2         | 114.04      | 0.02                  | 999.99          | 0.36            |
| Measurement 3         | 114.04      | 0.01                  | 1000.00         | 0.38            |
| Result (Average):     | 114.04      | 0.01                  | 999.99          | 0.37            |
| Expanded Uncertainty: | 0.1         | 0.02                  | 1               | 0.25            |
| Degree of Freedom:    | >100        | >100                  | >100            | >100            |
| Coverage Factor:      | 2           | 2                     | 2               | 2               |

The stated level is relative to 20µPa. The level is traceable to National Standards. The stated level is valid at reference conditions. The following correction factors have been applied during the measurement

Pres:0 dB/kPa Temp:0 dB/°C Humi:0 dB/%RH Load volume: 0.00015 dB/mm<sup>3</sup>

| Conditions             | Pressure kPa   | Temperature °C | Humidity %RH |
|------------------------|----------------|----------------|--------------|
| Reference conditions   | 101.325        | 23             | 50           |
| Measurement conditions | 101.328 ±0.042 | 20.9 ±0.1      | 40.3 ±1.4    |

The reported expanded uncertainty of measurements is based on a standard uncertainty multiplied by the coverage factor of k=2, providing a level of confidence of approximately 95%. Where the degrees of freedom are insufficient to maintain this confidence level, the coverage factor is increased to maintain this confidence level. The uncertainty has been determined in accordance with UKAS requirements.

Records: K:\C Al\Calibration\Nor-1504\Nor-1018 Cal\Cal\Current Year\NOR1255\_125525262\_M1.nmf

**Preconditioning**

The equipment was preconditioned for more than 4 hours in the specified calibration environment.

**Method**

Calibration has been performed as set out in the current version of CA Technical procedure TP01

**Calibration Dates:**

|                   |            |                |            |
|-------------------|------------|----------------|------------|
| Received date:    | 22/11/2023 | Reviewed date: | 24/11/2023 |
| Calibration date: | 24/11/2023 | Issued date:   | 24/11/2023 |

**Technicians: (Electronic certificate)**

Calibrated by: *Michael Tichner*

Reviewed by: *Jenny Crawford*

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to the SI system of units and/or to units of measurement realised at the National Physical Laboratory or other recognised national metrology institutes. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

Doc ref: Calb-Cert-Master-V3-08

## Certificate of Calibration and Conformance

Continuation of Certificate number: U46043

Reference Microphone: WSM8 (A) - GRAS-40AG.147852

### Measurements

The calibrator has been tested as described in the following annexes to BS EN IEC60942:2003 Sound Calibrators; B3.4 for sound pressure level, B3.5 for frequency, B3.6 for total distortion and A4.4 for short term stability of the pressure level.

### Instruments and Program

A complete list of instruments, hardware and software that have been used for this calibration is available from the calibration laboratory

### Comments

### Statement of Conformance and Calibration

As public evidence was available\*, from a testing organisation responsible for approving the results of pattern evaluation tests, to demonstrate that the model of sound calibrator fully conformed to the requirements for pattern evaluation described in annex A of BS EN IEC 60942:2003, the sound calibrator tested is considered to conform to all the class 1 requirements of that BS EN IEC 60942:2003.

\*This evidence is held on file at the calibration laboratory.

### Notes:

The sound pressure level generated by the calibrator in its ½ inch configuration was measured five times and averaged by a WS2P working standard microphone for class 1 or 2 devices or a LS2P reference microphone for class 0 or LS devices as specified in the International Standard BS EN 61094-4. The results of three replications and the mean of the measurements obtained are given in the measurement results table of this certificate. The frequency and distortion were measured in a similar manner. The figures in BOLD are the final results; a small correction factor may need to be added to the sound pressure level quoted here if the device is used to calibrate a sound level meter that is fitted with a free field response microphone. See manufacturer's handbooks for full details of this and other corrections that may be applicable.

### Observations:

### Decision Rule:

The decision rules have been applied in accordance with the procedure as described in BS EN 60942:2003

This certificate relates only to the items tested above.

\*\* End of Certificate \*\*

Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

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## **Appendix 3**

### **Summary of Sound Measurements**

## Appendix 3: Summary of Sound Measurements

### Noise Measurement Location 1 - Amersham

| Time         | L <sub>Aeq</sub> | L <sub>Amax</sub> | L <sub>A10</sub> | L <sub>A50</sub> | L <sub>A90</sub> |
|--------------|------------------|-------------------|------------------|------------------|------------------|
| 07:00        | 61.7             | 75.7              | 66.4             | 54.8             | 45.1             |
| 08:00        | 61.5             | 78.9              | 66.0             | 55.0             | 42.7             |
| 09:00        | 60.9             | 83.8              | 65.2             | 52.6             | 41.3             |
| 10:00        | 60.0             | 74.7              | 64.6             | 51.9             | 40.9             |
| 11:00        | 60.4             | 79.1              | 64.8             | 53.0             | 42.7             |
| 12:00        | -                | -                 | -                | -                | -                |
| 13:00        | -                | -                 | -                | -                | -                |
| 14:00        | -                | -                 | -                | -                | -                |
| 15:00        | 59.6             | 76.9              | 64.0             | 51.8             | 42.9             |
| 16:00        | 60.8             | 78.5              | 65.1             | 55.5             | 45.0             |
| 17:00        | 63.7             | 84.6              | 67.2             | 57.8             | 42.7             |
| 18:00        | 61.3             | 86.7              | 65.7             | 50.4             | 39.4             |
| 19:00        | 61.1             | 86.4              | 63.7             | 46.9             | 41.0             |
| 20:00        | 57.4             | 78.6              | 61.0             | 42.0             | 37.7             |
| 21:00        | 57.2             | 80.3              | 58.2             | 40.0             | 35.8             |
| 22:00        | 58.1             | 81.6              | 58.5             | 38.9             | 34.6             |
| 23:00        | 50.6             | 72.4              | 42.1             | 34.4             | 31.9             |
| 00:00        | 45.3             | 69.9              | 37.6             | 33.4             | 31.1             |
| 01:00        | 41.8             | 69.0              | 36.1             | 33.4             | 30.9             |
| 02:00        | 37.7             | 68.8              | 35.5             | 32.8             | 30.8             |
| 03:00        | 42.4             | 69.9              | 35.6             | 32.7             | 30.2             |
| 04:00        | 49.1             | 74.8              | 40.5             | 35.6             | 33.7             |
| 05:00        | 53.7             | 76.2              | 52.8             | 41.4             | 37.6             |
| 06:00        | 57.8             | 73.8              | 60.4             | 46.6             | 42.8             |
| <b>Day</b>   | <b>60.6</b>      | <b>86.7</b>       | <b>63.9</b>      | <b>50.0</b>      | <b>40.9</b>      |
| <b>Night</b> | <b>51.4</b>      | <b>76.2</b>       | <b>42.6</b>      | <b>36.3</b>      | <b>33.6</b>      |

## Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

## Noise Measurement Location 2 – Field View, Back Lane

| Time  | L <sub>Aeq</sub> | L <sub>Amax</sub> | L <sub>A10</sub> | L <sub>A50</sub> | L <sub>A90</sub> |
|-------|------------------|-------------------|------------------|------------------|------------------|
| 07:00 | 61.7             | 75.7              | 66.4             | 54.8             | 45.1             |
| 08:00 | 61.5             | 78.9              | 66.0             | 55.0             | 42.7             |
| 09:00 | 60.9             | 83.8              | 65.2             | 52.6             | 41.3             |
| 10:00 | 60.0             | 74.7              | 64.6             | 51.9             | 40.9             |
| 11:00 | 60.4             | 79.1              | 64.8             | 53.0             | 42.7             |
| 12:00 | -                | -                 | -                | -                | -                |
| 13:00 | -                | -                 | -                | -                | -                |
| 14:00 | -                | -                 | -                | -                | -                |
| 15:00 | 59.6             | 76.9              | 64.0             | 51.8             | 42.9             |
| 16:00 | 60.8             | 78.5              | 65.1             | 55.5             | 45.0             |
| 17:00 | 63.7             | 84.6              | 67.2             | 57.8             | 42.7             |
| 18:00 | 61.3             | 86.7              | 65.7             | 50.4             | 39.4             |
| 19:00 | 61.1             | 86.4              | 63.7             | 46.9             | 41.0             |
| 20:00 | 57.4             | 78.6              | 61.0             | 42.0             | 37.7             |
| 21:00 | 57.2             | 80.3              | 58.2             | 40.0             | 35.8             |
| 22:00 | 58.1             | 81.6              | 58.5             | 38.9             | 34.6             |
| 23:00 | 50.6             | 72.4              | 42.1             | 34.4             | 31.9             |
| 00:00 | 45.3             | 69.9              | 37.6             | 33.4             | 31.1             |
| 01:00 | 41.8             | 69.0              | 36.1             | 33.4             | 30.9             |
| 02:00 | 37.7             | 68.8              | 35.5             | 32.8             | 30.8             |
| 03:00 | 42.4             | 69.9              | 35.6             | 32.7             | 30.2             |
| 04:00 | 49.1             | 74.8              | 40.5             | 35.6             | 33.7             |
| 05:00 | 53.7             | 76.2              | 52.8             | 41.4             | 37.6             |
| 06:00 | 57.8             | 73.8              | 60.4             | 46.6             | 42.8             |
| Day   | <b>60.6</b>      | <b>86.7</b>       | <b>63.9</b>      | <b>50.0</b>      | <b>40.9</b>      |
| Night | <b>51.4</b>      | <b>76.2</b>       | <b>42.6</b>      | <b>36.3</b>      | <b>33.6</b>      |

Acoustic Impact Assessment:

Units 7/8, Heron Industrial Estate, Basingstoke Road, Reading

Hallway Properties Limited • 8<sup>th</sup> October 2024 • H4037b – NV – v4

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## **Appendix 4**

### **Units 7-8 Noise Management Plan**

## Units 7-8, Heron Industrial Estate: Noise Management Plan

### 1. Overview

This is the Noise Management Plan (“NMP”) for Holme Dodsworth Ltd T/A Holme Dodsworth Metals (the “Company”) for Units 7 to 8 of the Heron Industrial Estate situated in Spencers Wood, Reading (the “Site”). At the Site, various non-ferrous metals are stored, processed and distributed.

This NMP specifically considers the extended operating hours only (between 5am and 7am, as well as between 7pm and 11pm) and seeks to ensure that the site operations are effectively managed to mitigate and minimise the noise emission to the neighbouring noise sensitive residential dwellings, whilst acknowledging that the nature of the operations means that a degree of environmental noise emissions are unavoidable.

This document is subject to ongoing review for continuous improvement process purposes. This document supersedes any previous noise management plans.

### 2. Acoustic Impact Assessment

Hawkins Environmental’s acoustic impact assessment (report ref. H4037 – NV – v3) provides a full and detailed assessment of the noise impact from the evening delivery operations of the Company and demonstrates that complaints of noise would be unlikely.

### 3. Site Surroundings

The noise environment in the area is dominated by road traffic noise using Basingstoke Road. The nearest residential receptors to the site are as follows:

- Amersham, Basingstoke Road, a minimum of 62m to the south of units 7 and 8; and,
- Field View, Back Lane, a minimum of 32m to the north of units 7 and 8.

It should be noted that the receptors listed above are subject to low background noise, but high ambient noise from Basingstoke Road. With residential properties at and around Field View, Back Lane dominated to a lesser extent by road traffic noise, with slightly lower background and ambient sound levels.

Plant and equipment used at this site that contributes to the generation of environmental noise includes:

- HGV lorries;
- Roller shutters at the vehicle entrance to unit 8; and,
- Forklift trucks used to load and unload the HGV.

## 4. Permitted Activities

Holmes Dodsworth Metals will only undertake the following activities outside their current working hours:

- From 5pm onwards, approximately 6 lorries would arrive and goods will be loaded on to them via forklift, then depart.
- After 9pm a single lorry would arrive from Holmes Dodsworth Midlands facility. It would be driven into the warehouse and the shutters then closed and left until morning.
- Between 5am and 7am, the lorry (which previously arrived the night before) would be unloaded using a forklift. The lorry would then exit the premises.

For each delivery (either loading or unloading) the following activities would occur:

- Just prior to the arrival of the HGV, the roller shutter to Unit 8 will be opened;
- The HGV arrives uninterrupted and is able to drive directly towards Units 7/8 and straight into Unit 8, through the open shutter;
- The engine of the HGV will be turned immediately off and will not be turned back on until the vehicle is ready to be moved
- Products will be loaded and unloaded from the HGV using a single LPG powered forklift truck;
- Once one side of the HGV has been loaded or unloaded, the HGV will reverse, and complete a 180° turn and then pull back into the warehouse;
- Products will be loaded and unloaded from the other side of the HGV; and,
- Once paperwork has been completed, the HGV will pull out of the warehouse and leave the site uninterrupted where the shutters of Unit 8 are then closed.

No activities will take place at Unit 7/8 during the nighttime period (between 5am and 7am) or between 7pm and 11pm other than those listed above. No plant or machinery will be used within Unit 7/8 other than a single forklift. The shutters of Unit 7 will remain closed at all times during the nighttime period.

## 5. Noise Management and Mitigation

Noise management and mitigation is delivered through the site operations with a best practice approach. The Company will continue to adopt best practicable means, particularly between the hours of 5am – 7am and 7pm to 11pm. This is inclusive of the following measures:

Staff Awareness:

- Awareness of this NMP is to form part of the induction for new starters and new HGV drivers who will be present particularly during the evening and night-time operations at units 7/8; and
- All supplier drivers and HGV drivers who will be attending to the Site must be made aware of this NMP via their own company procedures.

Operation of Plant and Equipment:

- Any fixed noisy plant and machinery within units 7/8 must not be operated between 7pm and 7am;
- Roller shutters to units 7/8 are to be regularly inspected and serviced to ensure minimum noise generated by the actuation (opening and closing) of the shutters;
- Where possible, all machinery to be fitted with effective silencers; and
- Holmes Dodsworth Metals will inspect all plant, machinery and equipment (inclusive of the shutters at the entrance of units 7/8) at least twice per week and will be cautious in each check to ensure that excessive noise is avoided. In the event that excessive noise is identified, the Company will ensure that any plant, machinery or equipment is not used until the source of noise is identified and serviced.

#### Vehicle Movements:

- Drivers of HGVs, Forklifts and other vehicles access this site must seek to:
  - Engage gears with minimum noise;
  - Keep the revolutions per second of the engine to a minimum;
  - Gentle application of brakes; and
  - Close doors with minimum noise.
- Vehicle horns are only to be sounded in safety-critical situations;
- Vehicle radios must be switched off prior to arriving onsite;
- White noise, or other reversing alarms must not be used between 11pm and 7am;
- HGV drivers must contact the Site at a reasonable time prior to arrival. This will ensure that the main entrance gate, and roller shutters to units 7/8 can be opened so as to ensure that the HGV will not need to idle upon arrival;
- All unloading and loading of any vehicle shall be undertaken with the greatest care and in a manner which is conducive to the least amount of noise;
- HGV drivers shall ensure that trailer sidings and tailgates are closed in a manner to avoid knocking/banging or other excessive noise;
- Forklifts to be fitted with rubber fork covers to improve noise emissions; and
- Where feasible, the Company must consider the use of hybrid or full electric drivetrain technologies when purchasing, hiring or using vehicles onsite; including forklifts and HGVs, to minimise or avoid engine noise emissions.

#### Communication:

- Spoken communication between staff and/or vehicle delivery drivers to be undertaken at a normal and reasonable vocal effort. Shouting and raised voices are not permitted at any time, with the exception of safety-critical situations.

#### Training and Management:

- Regular training will be delivered by the Company management to operatives to ensure this NMP is adhered to; and
- Company management will undertake regular audits to ensure that the NMP is being implemented.

## 6. Complaints

Should a complaint from a member of the public be received, the Site manager will be responsible for recording, investigating and identifying the nature of the complaint according to the following procedure:

- The date and time of the complaint along with the complainant's location at the time the incident was observed shall be noted;
- Where possible, the complaint will be acknowledged on the day of receipt;
- In investigating the complaint, the following measures will be taken:
  - An inspection of the plant, machinery or equipment in use will be made to identify any excessive noise from any particular item; and
  - A check of working practices.
- The complaint will be logged accurately and stored for future reference;
- Feedback will be given to the member of public within 2 working days of receipt of the complaint.
- Where necessary, additional staff training will be provided; ensuring compliance with the NMP; and
- The NMP will be revised where necessary in accordance with continuous improvement practices.

Communication with Residents and the Local Authority:

- Local residents will be advised of a dedicated email address and phone number which may be used to contact the Site in the event of concerns about noise.

## 7. Record Keeping & Document Review

A Site logbook will be retained by the Site manager and will record the following information:

- Records of contact and correspondence with stakeholders (local residents and the local authority) regarding noise; and
- Records of days when noise surveys are undertaken.

This document will be reviewed annually, or sooner should the outcome of a complaint require it.

As a considerate neighbour, Holme Dodsworth Metals management will fully cooperate with the Council regarding any formal noise complaints. Any remedial measures required by the Council will be implemented without exception.