SOUTHAM ROAD
BANBURY

NOISE IMPACT ASSESSMENT

PLANNING STAGE
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R01

2ND JULY 2018

VANGUARDIA

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CONTENTS

1. INTRODUCTION

1.1. A noise impact assessment has been carried out for the proposed use of an existing industrial unit on Southam Road, Banbury, which is also to be refurbished prior to reopening.

1.2. The assessment considers potential noise impacts at the nearest residential properties due to operational activities within the associated service yard during the daytime and night-time periods.

1.3. A baseline noise survey was conducted at a location representative of the nearby residential properties to establish the existing noise climate.

1.4. This report presents the predicted operational noise levels at the residential properties in relation to existing sound levels, and an assessment of the likelihood of any adverse impacts.

2. ASSESSMENT CRITERIA

2.1. The guidance and policy documents that provide relevant noise assessment criteria for the development are:

- Noise Policy Statement for England, 2010;
- National Planning Policy Framework, 2012; and
- BS 4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound.

2.2. Relevant details of these guidance and policy documents are provided below.

NOISE POLICY STATEMENT FOR ENGLAND, 2010

2.3. The Noise Policy Statement for England (NPSE) is the overarching noise policy and seeks to clarify the underlying principles and aims in policy documents and guidance for environmental noise. It sets out the Government's long-term vision, which is to "*Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.*"

2.4. This vision is supported by three policy aims (paragraph 1.7 of NPSE):

"*Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on 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.*"

2.5. The NPSE states that it is not possible to identify a single objective value that defines the onset of adverse or significant adverse effects. Consequently, the onset of adverse effects is likely to vary for different noise sources and receptors. Paragraph 2.24 of NPSE asserts that whilst all reasonable measures should be taken to mitigate and reduce adverse effects, this does not mean that such adverse effects cannot occur.

NATIONAL PLANNING POLICY FRAMEWORK, 2012

2.6. The National Planning Policy Framework (NPPF) aims to devolve planning decision making to local planning authorities, asserting the primacy of local development plans and sustainable development. It encourages local planning authorities to set their own standards within the NPPF (although not as fixed thresholds) and adopt a more holistic approach to sustainable development.

2.7. The NPPF address the planning issue of noise through four principles, as stated in paragraph 123 of NPPF:

"*Planning policies and decisions should aim to:*

- *avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from new development, including through the use of conditions;*
- *recognise that development will often create some noise and existing businesses wanting to develop in continuance of business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*
- *identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.*"

2.8. The NPPF refers to NPSE for advice on the achievement of these aims, and particularly for the explanation of "adverse impacts".

BS 4142:2014 METHODS FOR RATING AND ASSESSING INDUSTRIAL AND COMMERCIAL SOUND

2.9. BS 4142:2014 provides guidance on the assessment of noise impacts from industrial and/or commercial sources, an initial estimate of which is derived by subtracting the background sound level from the rating level, as defined in the standard. Section 11 of BS 4142:2014 states:

- "*Typically, the greater this difference [between rating level and background level], the greater the magnitude of the impact.*
- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.*
- *The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or 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.*"

2.10. The references to context mean the consideration of other factors such as the absolute level of sound and, in the case of residential properties that might be affected, the sound insulation provided by the building envelope, to determine the final estimate of impact.

3. BASELINE NOISE SURVEY

3.1. An unattended noise level survey was conducted between Tuesday 29th May and Wednesday 6th June 2018 to establish the existing noise climate at the nearest residential properties. Figure 1 presents the survey location in relation to the residential properties and the industrial unit.

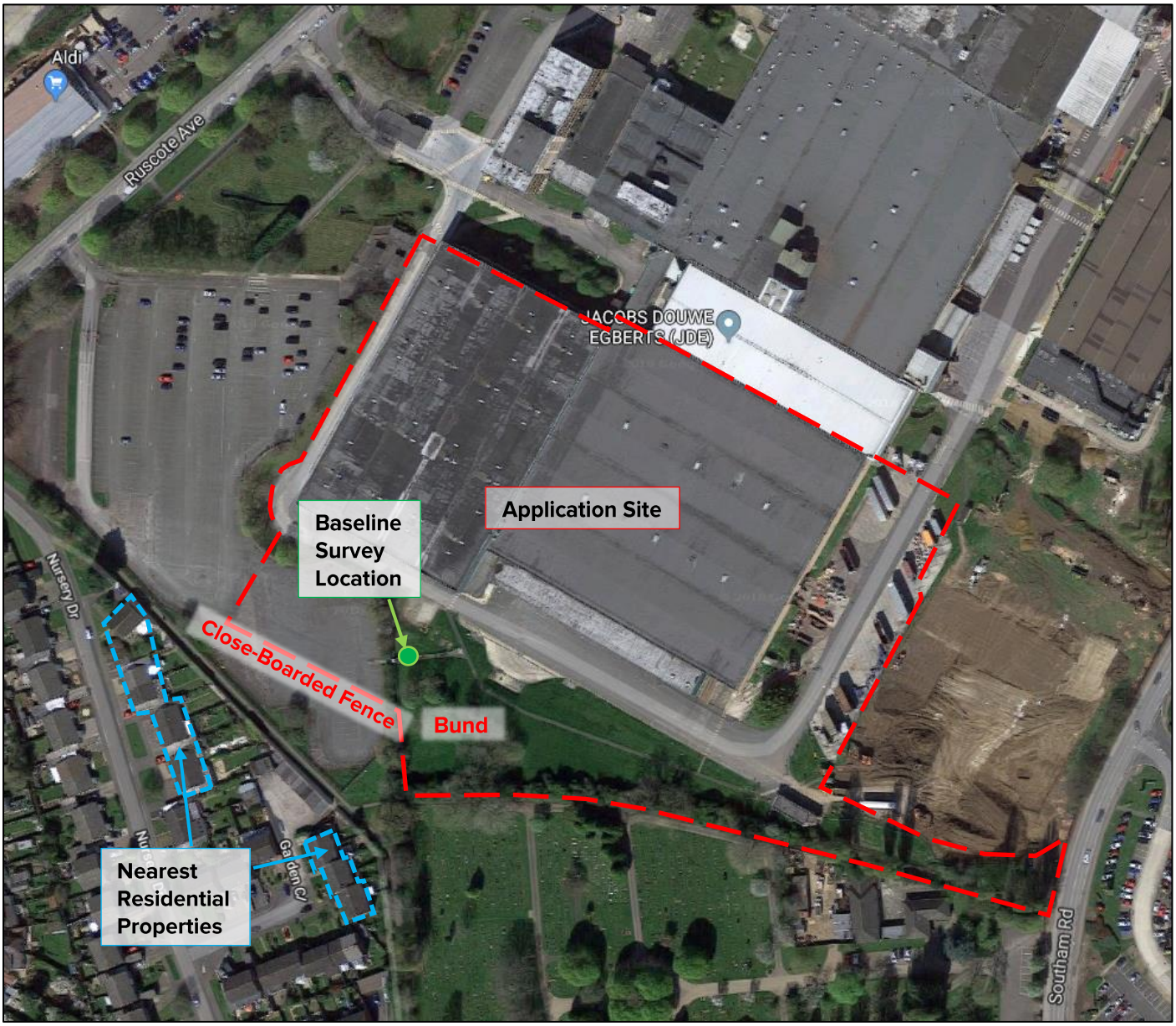


Figure 1 Baseline Noise Survey Location Plan

3.2. As the industrial unit (indicated by the red line boundary in Figure 1) is currently vacant, the background sound levels measured at the survey location are considered representative of the background sound levels at the nearby residential properties. The dominant source of noise is road traffic on Ruscote Avenue to the north and Southam Road to the east.

3.3. Table 1 presents the baseline survey results, in terms of the logarithmically averaged ambient sound levels and the typical (modal) background sound levels.

Table 1 Measured Baseline Sound Levels

Period	Average Ambient Sound Level	Typical Background Sound Level
Daytime (07:00-23:00)	52 dB $L_{Aeq,T}$	47 dB $L_{A90,T}$
Night-time (23:00-07:00)	52 dB $L_{Aeq,T}$	44 dB $L_{A90,T}$

3.4. Full survey results, including analysis of the typical background sound levels, are given in Appendix A.

4. NOISE IMPACT ASSESSMENT

4.1. The likely noise levels at the nearest residential properties, due to service yard activities, have been calculated based on the expected HGV source noise levels, as well as distance attenuation and shielding effects of the topography between source and receptor locations.

4.2. The service yard activities included in the calculations are HGV reversing manoeuvres (including narrowband reversing alarm), loading/unloading and HGV start-up & pull away. Source noise levels for these activities have been taken from Vanguardia measurement library and are presented in Table 2.

Table 2 HGV Source Noise Levels

Activity	Sound Power Level
HGV reversing (with narrowband alarm)	99 dB L_{wA}
HGV start-up & pull away	101 dB L_{wA}
HGV loading/unloading	91 dB L_{wA}

4.3. The typical hourly profile of HGVs has been provided by DTA Transportation Ltd. The peak daytime and night-time hours (i.e. the hours with the highest number of HGV movements) have been used for the noise assessment. The highest number of HGVs are presented in Table 3.

Table 3 Number of HGVs in Peak Hour

Period	Number of HGVs in Peak Hour
Daytime	6
Night-time	6

4.4. The nearest residential properties to the service yard are the houses on Garden Close and Nursery Drive, as indicated in Figure 1, above. There is an existing earth bund between the service yard and the houses on Garden Close. The proposed refurbishment of the industrial unit includes the erection of a solid fence on top of the retaining wall, west of the earth bund. The existence of the earth bund, along with the proposed fence, means that the nearest residential properties will be shielded from the industrial unit noise sources i.e. there will be no line-of-sight.

4.5. The noise levels at the residential properties have been calculated over the appropriate reference time intervals given in BS 4142:2014 i.e. 1 hour during the daytime and 15 minutes during the night-time. The calculation results are presented in Table 4.

Table 4 Predicted Industrial Sound Levels at the Residential Properties

Receptor Location	Specific Sound Level, dB $L_{Aeq,T}$	
	Daytime	Night-time
Garden Close	41	39
Nursery Drive	43	42

4.6. To estimate the likely impact that these predicted noise levels may have at the residential properties, the rating level should be calculated by adding an acoustic feature correction to the specific sound level, if necessary. Acoustic feature corrections are determined based on the presence of tones, impulses, intermittency or other characteristics that are readily distinguishable **at the residential properties**.

4.7. For this scheme it is not considered necessary to add acoustic feature corrections to the predicted specific sound levels because it is expected that operational (specific) noise would only rarely, if at all, be audible above the residual (ambient) sound levels at the receiver locations. Therefore, any characteristics of the sound would be barely distinguishable.

4.8. The assessment of impacts at the residential properties, due to service yard activities, is summarised in Table 5.

Table 5 Quantitative Assessment of the Impact of the Industrial Sound at the Nearest Residential Properties

Receptor Location	Period	Specific Sound Level, dB $L_{Aeq,T}$	Acoustic Feature Correction, dB	Rating Level, dB	Background Sound Level, dB $L_{A90,T}$	Excess of Rating Level over Background Sound Level
Garden Close	Daytime	41	0	41	47	-6
	Night-time	39		39	44	-5
Nursery Drive	Daytime	43		43	47	-4
	Night-time	42		42	44	-2

4.9. It can be seen, from Table 5, that the rating levels are below the background sound levels during the day and night. This is an indication that noise from the industrial unit is not expected to have an adverse impact at the nearest residential properties.

5. CONCLUSION

5.1. A noise impact assessment has been conducted using the principles of the methodologies outlined in the relevant policy documents/guidance (described in Section 2).

5.2. A baseline noise survey was carried out at a location representative of the nearest residential properties to establish the existing noise climate.

5.3. The assessment of the operational noise from the industrial unit using the principles described in BS 4142:2014 indicates that adverse impacts are unlikely to occur.

APPENDIX A

BASELINE NOISE SURVEY DETAILS

Instrumentation: Larson Davis SoundExpert LxT sound level meter, serial number 5599. The instrument was calibrated before and after the survey with the appropriate field calibrator. No significant drift was recorded.

Measurement Period: The survey was conducted between 17:15 hours on Tuesday 29th May and 10:15 hours on Wednesday 6th June 2018.

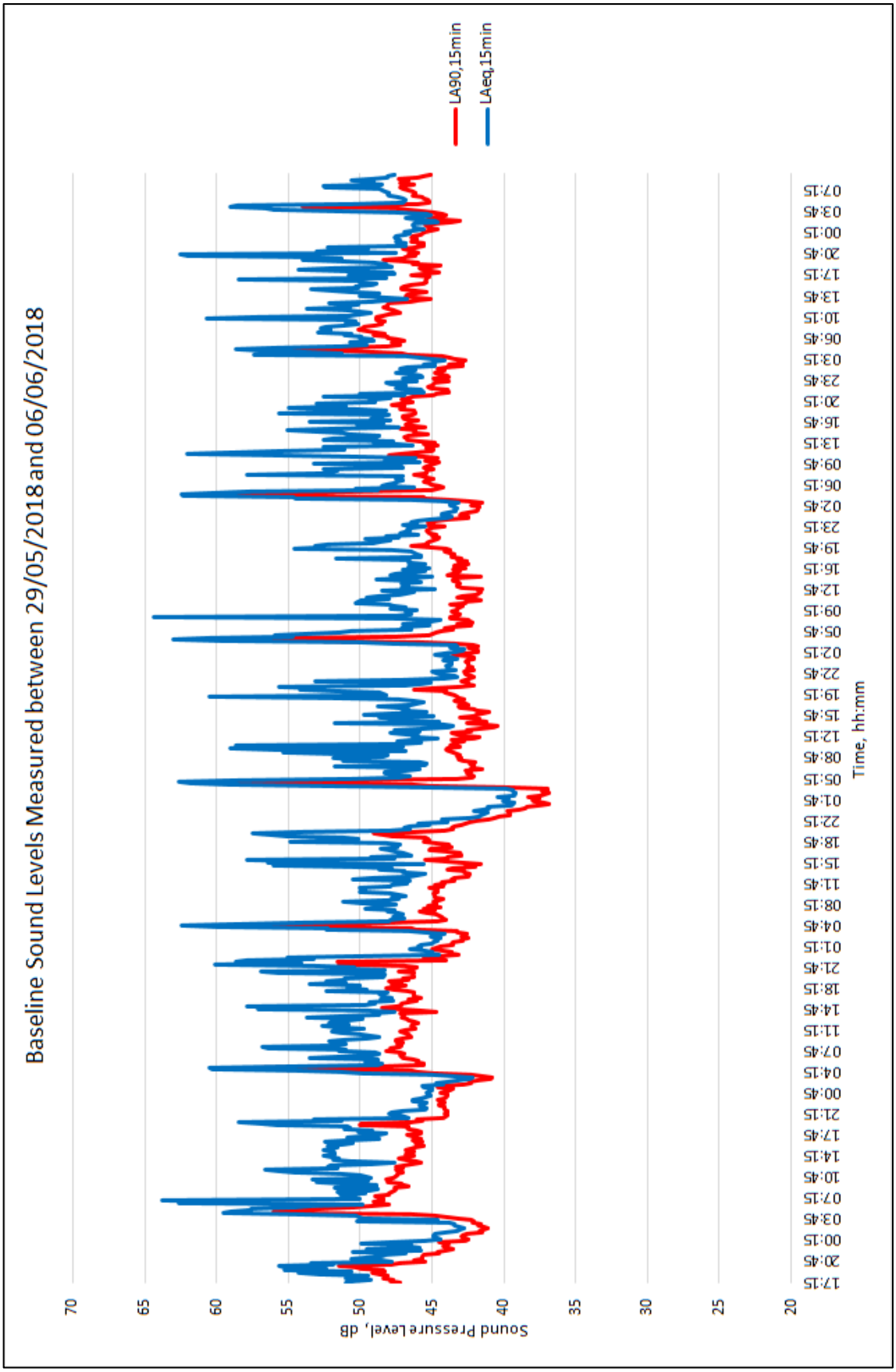
Weather Conditions: The weather conditions during the survey period were generally dry with little wind. The were some periods of precipitation during the survey, particularly during the evening of Thursday 31st June. Sound level measurements recorded during heavy rainfall have been excluded from the results presented in Table 1. A summary of the weather conditions is presented in the table below.

Date	Temperature, Average °C	Wind Speed, Average km/h	Wind Direction	Precipitation, Highest Accum. mm
29/05/2018	17	1	SSW	1.5
30/05/2018	15	0	SSE	10.5
31/05/2018	20	1	SE	28.4
01/06/2018	21	0	SE	0
02/06/2018	19	0	WSW	0
03/06/2018	19	0	SSW	0
04/06/2018	15	0	SSW	0
05/06/2018	14	1	S	0
06/06/2018	16	1	SSW	0

Weather Station: IBANBURY3

Personnel: I Alli-Balogun MIOA

Results: The measurement results for ambient and background sound levels, over the entire survey period, are presented below in graphical form.


Baseline Sound Levels Measured between 29/05/2018 and 06/06/2018
LA90,15min
LAeq,15min
Sound Pressure Level, dB
70
65
60
55
50
45
40
35
30
25
20
Time, hh:mm
17:15
20:45
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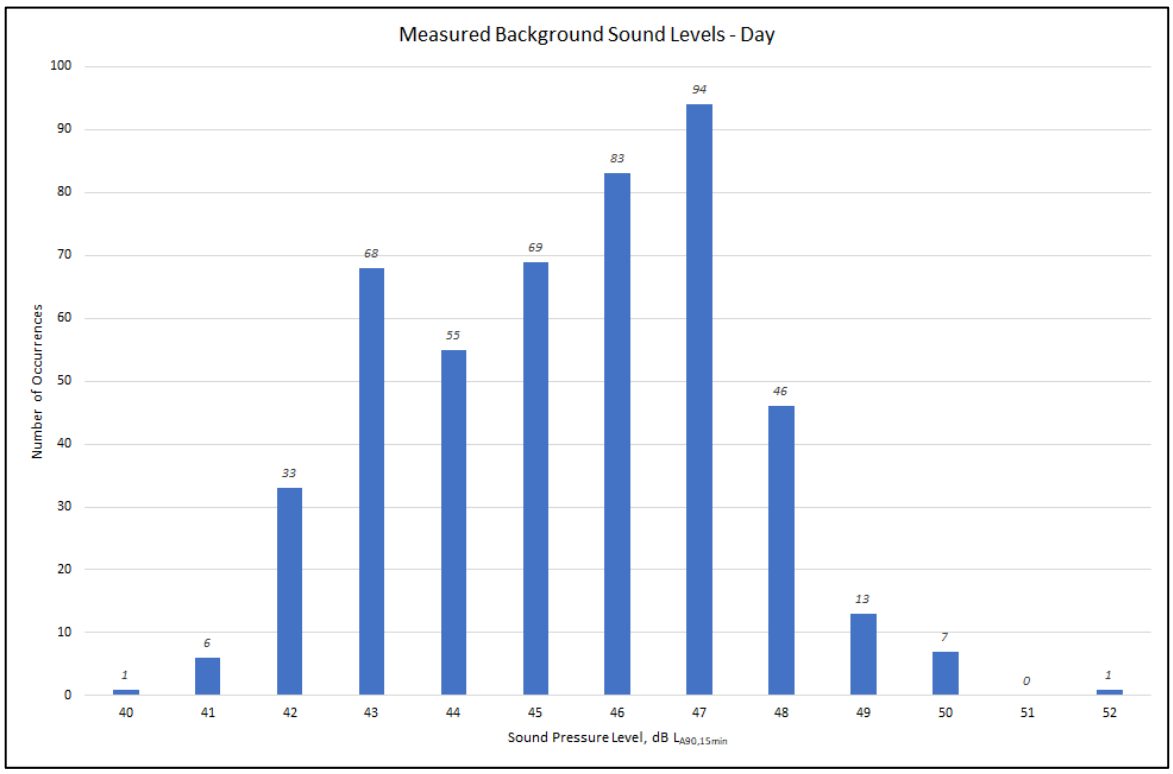
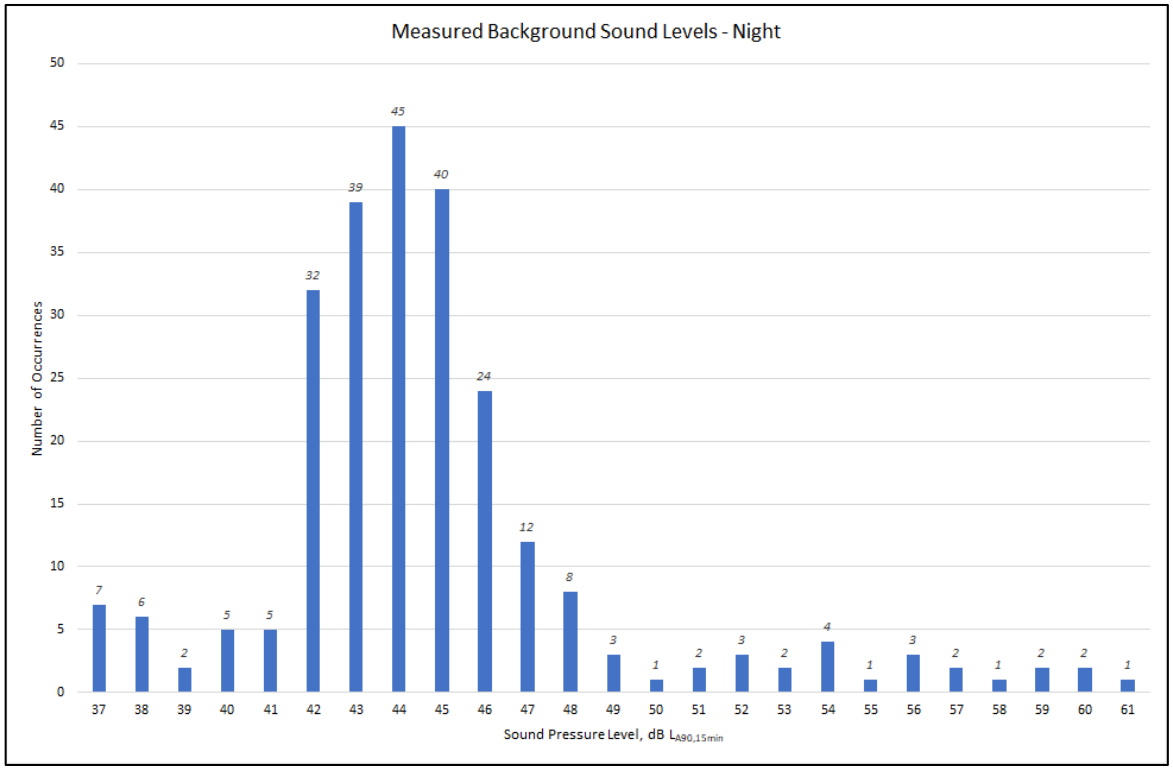
A statistical analysis of the measurement data has been performed to determine the typical background sound levels, as described in BS 4142:2014. This is presented below for daytime and night-time.





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