

# MFG Warminster BA12 9NT

## Environmental Noise Survey and Plant Noise Impact Assessment Report

**Date:** 28 July 2026

**Client:** MBH Design Studio Ltd  
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**Ref:** QA26301/PNIA

## Document Control

### Document History

| Revision | Issue Date | Changes                                                                                                   |
|----------|------------|-----------------------------------------------------------------------------------------------------------|
| 0        | 10/07/2026 | -                                                                                                         |
| 1        | 28/07/2026 | Reduced number of Jet Washes and EV chargers & relocated them further away from noise-sensitive receptors |

### Document Approvals

| Role        | Name                                                     | Signature                                                                            | Date         |
|-------------|----------------------------------------------------------|--------------------------------------------------------------------------------------|--------------|
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### For Information

#### Please Note

Quantum Acoustics Ltd have prepared this report with generally accepted acoustic consultancy principles, using all reasonable skill, care and diligence. This is as per the terms agreed between Quantum Acoustics Ltd and our Client. Information referred to herein which may have been provided by third parties should not be assumed to have been checked and verified by Quantum Acoustics Ltd, unless specifically confirmed to the contrary. Both confidential and commercially sensitive information is contained within this document, and as such it should not be disclosed to third parties. Any third party choosing to rely on this document does so at their own risk.

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## 1.0 INTRODUCTION

- 1.1 It is proposed to remodel the service station known as MFG Warminster. The works include the creation of an EV charging zone, substation enclosure, LV enclosure, meter cabinet, four jet washes, plant room, and associated works.
- 1.2 Quantum Acoustics have been appointed by MBH Design Studio Ltd to undertake an environmental background noise survey to establish appropriate plant noise emission criteria and subsequently assess the acceptability of atmospheric noise emission from the proposed plant.
- 1.3 This report presents our methodology and findings.

## 2.0 SITE DESCRIPTION

- 2.1 MFG Warminster is located on Weymouth Street, Warminster, BA12 9NT. The location of the site is shown below outlined in red, the location of the proposed new equipment highlighted yellow and identified noise sensitive receptor in blue:



Site Plan (Google Imagery 2025, The GeoInformation Group)

- 2.2 The local planning authority is Wiltshire Council.

## 3.0 ACOUSTIC TERMINOLOGY

3.1 The following section uses the following acoustic terms:

- **A-weighted** noise levels are frequency-weighted in a way that approximates the frequency response of the human ear and allows sound levels to be expressed as a single figure value. The A-weighted level is therefore a measure of the subjective loudness, rather than physical amplitude.
- **L<sub>90</sub>** is the noise levels that is exceeded for 90% of the measurement period. It reflects the quiet periods during that time and is often referred to as the "background noise level". It is often used as a basis for setting noise emission criteria. The A-weighted value over time period (T) is written as  $L_{A90,T}$ .
- **L<sub>eq</sub>** is the level of a notional continuous sound that would deliver the same sound energy as the actual fluctuating sound over the measurement period. This may be thought of as the "average" level during the measurement period.
- **L<sub>max</sub>** is the maximum noise level during the measurement period.

## 4.0 NOISE SURVEY METHODOLOGY

### Survey Period

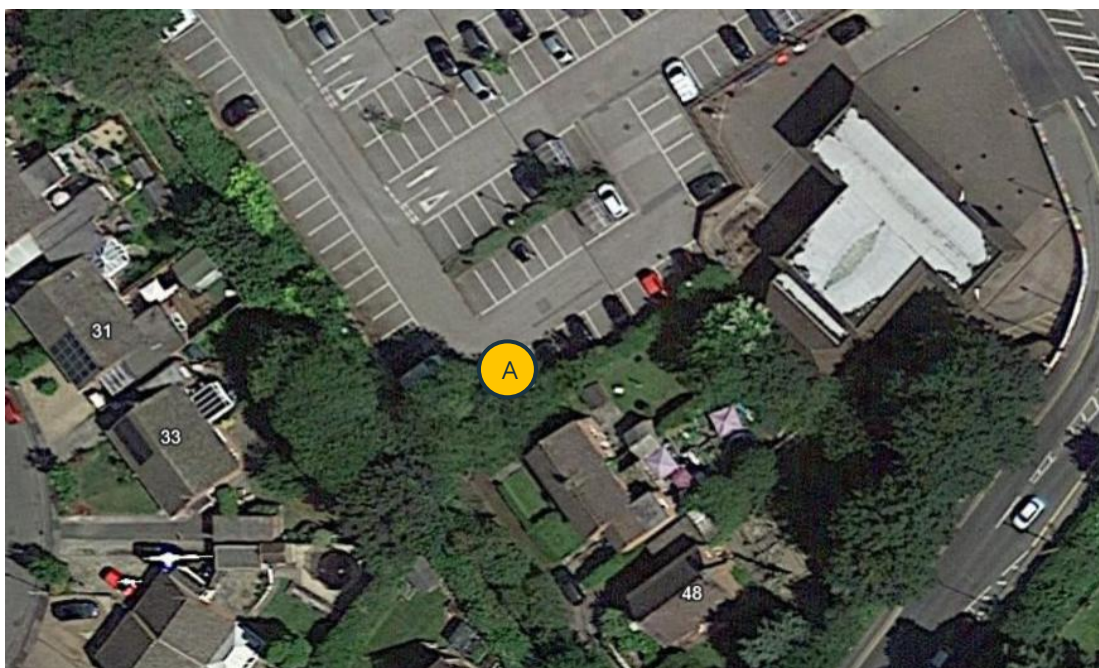
- 4.1 An automated environmental noise survey was undertaken from approximately 11:30 hours on Friday 12 June to approximately 12:00 hours on Monday 15 June 2026.

### Measurement Position

- 4.2 Noise monitoring equipment was located at the following position:

| Noise Monitoring Positions |                                                                             |
|----------------------------|-----------------------------------------------------------------------------|
| Position                   | Description                                                                 |
| Position A                 | Attached to a lamp post, at a height of approximately 3 m above the ground. |

- 4.3 The noise monitoring position is indicated on the following plan.



Plan Showing Measurement Positions (Google Imagery 2025, The GeoInformation Group)

### Equipment

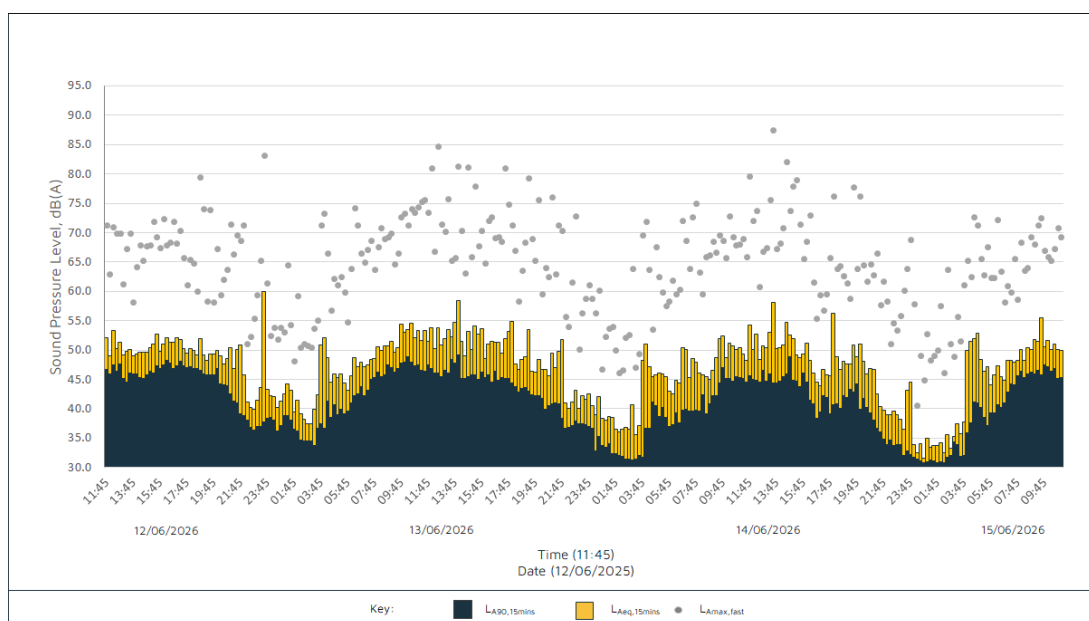
- 4.4 The sound level meter was set up to continuously measure the A-weighted (dBA)  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  sound pressure levels over sampling periods of 15 minutes duration.

- 4.5 Calibration certificates for the equipment, traceable to national standards, used in this survey are available upon request.
- 4.6 Calibration checks were carried out prior to and on completion of the survey, with no significant calibration drift observed.
- 4.7 Details of the equipment used for the survey are summarised below:

| Survey Equipment |                          |              |          |                        |
|------------------|--------------------------|--------------|----------|------------------------|
| Location ID      | Description              | Manufacturer | Type     | Serial Number          |
| Position A       | Type 1 Sound Level Meter | Convergence  | Nsrt_mk4 | AvNUj12ycd2XCrtgw2pRND |
| -                | Acoustic Calibrator      | Svantek      | SV 33B   | 125699                 |

## 5.0 NOISE SURVEY FINDINGS

- 5.1 The noise survey results are presented in the graph below, showing the A-weighted  $L_{90}$ ,  $L_{eq}$  and  $L_{max}$  noise levels measured during each consecutive 15-minute period of the survey.



- 5.2 The measured ambient background noise levels at the unattended measurement position are presented in the table below:

| Date                  | Period              | Average $L_{Aeq,T}$ (dB) | Minimum $L_{A90}$ (dB) | Maximum $L_{A90}$ (dB) | Modal $L_{A90}$ (dB) | Mean $L_{A90}$ (dB) |
|-----------------------|---------------------|--------------------------|------------------------|------------------------|----------------------|---------------------|
| Friday 12 June 2026   | Day 11:45 - 23:00   | 50                       | 36                     | 48                     | 47                   | 46                  |
|                       | Night 23:00 - 07:00 | 48                       | 34                     | 44                     | 37                   | 39                  |
| Saturday 13 June 2026 | Day 07:00 - 23:00   | 51                       | 37                     | 49                     | 45                   | 45                  |
|                       | Night 23:00 - 07:00 | 44                       | 31                     | 41                     | 37                   | 37                  |
| Sunday 14 June 2026   | Day 07:00 - 23:00   | 50                       | 34                     | 49                     | 45                   | 43                  |
|                       | Night 23:00 - 07:00 | 45                       | 31                     | 41                     | 31                   | 36                  |
| Monday 15 June 2026   | Day 07:00 - 11:00   | 51                       | 43                     | 48                     | 46                   | 46                  |

- 5.3 We understand that the proposed jet wash bays and air/vac units will be available for customer use between 07:00 and 23:00 hours, with peak periods occurring between 09:00 and 19:00 hours. We understand that customer usage is expected to comprise up to three jet wash operations per bay during each typical peak hour (nine uses per hour, total), and up to two jet wash operations, total, during each typical off-peak hour.
- 5.4 The measured ambient and background noise levels during peak and off-peak hours are presented in the table below. These peak/off-peak results will form the basis of our noise impact assessment of the jet wash and air/combi equipment.

| Date                        | Period                                         | Average<br>L <sub>Aeq,T</sub> (dB) | Minimum<br>L <sub>A90</sub> (dB) | Maximum<br>L <sub>A90</sub> (dB) | Modal<br>L <sub>A90</sub> (dB) | Mean L <sub>A90</sub><br>(dB) |
|-----------------------------|------------------------------------------------|------------------------------------|----------------------------------|----------------------------------|--------------------------------|-------------------------------|
| Friday 12<br>June<br>2026   | Peak<br>(11:45 – 19:00)                        | 51                                 | 44                               | 48                               | 47                             | 47                            |
|                             | Off-peak<br>(19:00 – 23:00)                    | 48                                 | 36                               | 47                               | 46                             | 43                            |
| Saturday<br>13 June<br>2026 | Peak<br>(09:00 – 19:00)                        | 53                                 | 43                               | 49                               | 45                             | 46                            |
|                             | Off-peak<br>(07:00 – 09:00 &<br>19:00 – 23:00) | 48                                 | 37                               | 46                               | 42                             | 42                            |
| Sunday<br>14 June<br>2026   | Peak<br>(09:00 – 19:00)                        | 51                                 | 38                               | 49                               | 45                             | 44                            |
|                             | Off-peak<br>(07:00 – 09:00 &<br>19:00 – 23:00) | 47                                 | 34                               | 44                               | 40                             | 40                            |
| Monday<br>15 June<br>2026   | Peak<br>(09:00 – 11:00)                        | 52                                 | 45                               | 48                               | 46                             | 46                            |
|                             | Off-peak<br>(07:00 – 09:00)                    | 49                                 | 43                               | 46                               | 44                             | 45                            |

## Discussion of Noise Climate

- 5.5 During the periods we were present on site, the subjectively dominant noise sources at measurement Position A were road traffic noise from Weymouth Road, the nearby Morrisons carpark and noise associated with the MFG Warminster service station.
- 5.6 Weather conditions during the survey period were generally suitable for measuring environmental noise, it being dry and calm.

## 6.0 PLANNING POLICY AND ASSESSMENT GUIDANCE

### Noise Policy Statement for England

- 6.1 The Noise Policy Statement for England (NPSE) was published in March 2010. The NPSE is the primary statement of noise policy for England and applies to all forms of noise other than occupational noise. The NPSE sets out the long-term vision of Government noise policy 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."*

*"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."

- 6.2 The Explanatory Note to the NPSE introduces guidance to assist in defining the adverse impacts:

- **NOEL – No Observed Effect Level**

This is the level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.

- **LOAEL – Lowest Observable Adverse Effect Level**

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

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

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

- 6.3 These categories are further discussed in the Planning Practice Guidance section below.

- 6.4 The NPSE acknowledges that it is not possible to have a single objective noise level based measure that is mandatory and applicable to all sources of noise in all situations.

## Planning Practice Guidance

- 6.5 The government's Planning Practice Guidance is a web based resource and provide advice on various issues, including noise (<https://www.gov.uk/guidance/noise--2>). The advice (March 2014, latest update July 2019) states in the context of considering when noise is relevant to planning, "noise needs to be considered when new development may create additional noise, or would be sensitive to the prevailing acoustic environment (including any anticipated changes to that environment from activities that are permitted but not yet commenced)."
- 6.6 The Planning Practice Guidance pages also include more explanation of the effect level categories noted above, providing an explanatory Noise Exposure Hierarchy Table, which explores how actions such as a requirement for noise mitigation, or prevention of a development, might be assessed with respect to whether noise levels are considered above the category thresholds.

| Planning Practice Guidance - Noise Exposure Hierarchy |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                  |
|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------|
| Response                                              | Examples of outcomes                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Increasing effect level             | Action                           |
| No Observed Effect Level                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                  |
| Not present                                           | No effect                                                                                                                                                                                                                                                                                                                                                                                                                                                            | No Observed Effect                  | No specific measures required    |
| Present 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                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                  |
| Present and intrusive                                 | Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up 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. Potential for some reported sleep disturbance.                                                                                                                                                                   | Observed Adverse Effect             | Mitigate and reduce to a minimum |
| Significant Observed Adverse Effect Level             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                     |                                  |
| Present and disruptive                                | The noise causes a material change in behaviour and/or attitude, e.g. 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. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area. | Significant Observed Adverse Effect | Avoid                            |
| Present and very disruptive                           | Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable hard, e.g. auditory and non-auditory.                                                                                                                                                                              | Unacceptable Adverse Effect         | Prevent                          |

## National Planning Policy Framework

- 6.7 The following paragraph is from the National Planning Policy Framework (NPPF). The NPPF was revised in December 2024.

*"198. 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"*

## Local Authority Requirements

- 6.8 The site lies within the jurisdiction of Wiltshire Council.
- 6.9 Section 6.6 of the Planning Consultation Guidance Note – Noise and Vibration, updated 2023 states the following:

*"6.6 Introduction of a new Industrial or Commercial Noise Source*

*For most proposed industrial and commercial noise sources, an assessment in line with BS 4142 should be carried out at the façade of noise sensitive premises. One of the indications of the impact of a BS 4142 assessment is 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.*

*New developments should contribute and enhance the area in which they are located and where possible i.e. prevent 'noise creep', contribute to the improvement of people's health and quality of life as per the NPSE. Therefore, the design objective should be:*

***'The development should be designed so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location.'***

*Where this criterion cannot be achieved, the various noise control measures considered as part of the assessment should be fully explained (i.e. relocation of noise sources, use of quieter equipment, enclosures, screening, restriction of the hours of operation) and the achievable noise level should be identified. This information will allow a judgement to be made concerning the application*

*and its likely impact on the surrounding area. In addition to the above, maximum noise levels should also be adequately controlled.*

*Background and ambient noise levels shall be representative of the existing noise levels at the most sensitive time during the proposed period(s) of operation. Where different operating regimes are proposed (for example daytime, evening and night-time), background and ambient noise levels shall be determined for each operating period."*

- 6.10 The assessment has been undertaken in accordance with BS 4142:2014+A1:2019 and with regard to Wiltshire Council's Planning Consultation Guidance Note – Noise and Vibration.

### BS 4142:2014

- 6.11 BS 4142:2014+A1:2019 "Methods for Rating and Assessing Industrial and Commercial Sound" addresses the likelihood of adverse impact from noise generated by plant equipment. A noise rating is determined and compared with the existing local background sound level, and several cumulative acoustic feature corrections to the noise rating are available to apply where appropriate. For example, if the noise includes a distinguishable tone, impulse, intermittency or other readily distinguishable sound characteristic.
- 6.12 BS 4142:2014 seeks to determine a "representative" background sound level, stating that "...the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods".
- 6.13 The assessment of the impact depends upon the margin by which the rating level of the specific sound source exceeds the background sound level but also promotes a consideration of the context in which the sound occurs when making an assessment. BS 4142:2014 states that an initial estimate of the impact of the specific sound is made by subtracting the measured background sound level from the rating level, while considering the following points:
- a) Typically, the greater this difference, the greater the magnitude of the impact.
  - b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
  - c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
  - d) 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.
- 6.14 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.

## 7.0 PLANT NOISE IMPACT ASSESSMENT

- 7.1 The proposed layout has been revised following the initial assessment. The number of jet wash bays and EV charging units have been reduced, and the remaining equipment has been relocated farther from the nearest residential receptor. The assessment presented below is based on this revised layout.

### Proposed Plant Selections

- 7.2 We understand the proposed plant comprises:

| Proposed Plant                    |                 |                                                 |
|-----------------------------------|-----------------|-------------------------------------------------|
| Plant make/model                  | Number of units | Manufacturer's Sound Pressure Level (dBA) at 1m |
| Istobal Jet Wash Bay MOD. 4CA2000 | 3               | <70                                             |
| Istobal Airserv Combi Unit        | 3               | 65.6                                            |
| Alpitronic 400 HYC EV charger     | 3               | <61.5                                           |

### Computational Noise Modelling

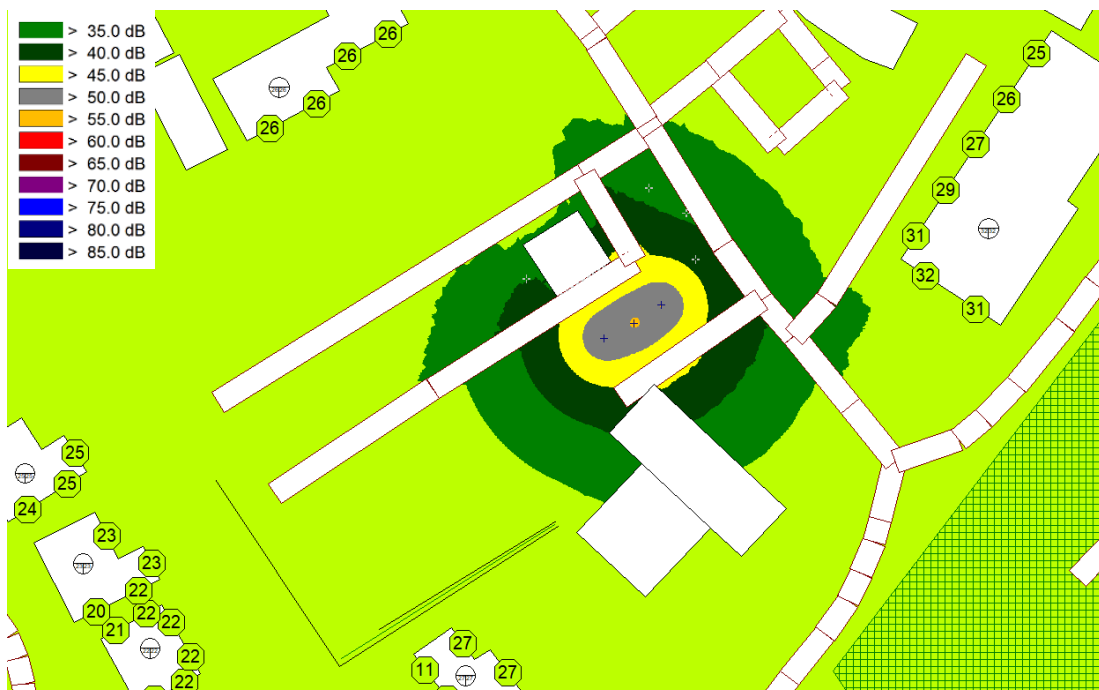
- 7.3 The results of the baseline noise monitoring have been used to develop and validate a computational noise model of the site using Datakustic CadnaA® noise modelling software.
- 7.4  $L_{Aeq}$  noise levels, calculated at a grid height of 3 m above ground level at peak times, are shown on the below colourmap:



7.5 LAeq noise levels, calculated at a grid height of 3 m above ground level at off-peak, are shown on the below colourmap:



- 7.6  $L_{Aeq}$  noise levels, calculated at a grid height of 3 m above ground level at nighttime, are shown on the below colourmap:



## Noise Impact Assessment

| Description                                    | 33 Sambourne Gardens | 44 Weymouth Street | Regal Court |
|------------------------------------------------|----------------------|--------------------|-------------|
| Peak hours (09:00-19:00)                       |                      |                    |             |
| Calculated continuous noise (1 hour) at façade | 37 dBA               | 38 dBA             | 41 dBA      |
| Correction for possible intermittency          | +3 dB                |                    |             |
| Corrected noise rating level at façade         | 40 dBA               | 41 dBA             | 44 dBA      |
| Representative background noise level          | 46 dBA               |                    |             |
| Difference                                     | -6 dB                | -5 dB              | -2 dB       |
| Off-peak hours (07:00-09:00 & 19:00-23:00)     |                      |                    |             |

| Description                                    | 33 Sambourne Gardens | 44 Weymouth Street | Regal Court |
|------------------------------------------------|----------------------|--------------------|-------------|
| Calculated continuous noise (1 hour) at façade | 32                   | 33                 | 37 dBA      |
| Correction for possible intermittency          | +3 dB                |                    |             |
| Corrected noise rating level at façade         | 35                   | 36                 | 40 dBA      |
| Representative background noise level          | 42 dBA               |                    |             |
| Difference                                     | -7 dB                | -6 dB              | -2 dB       |
| Night-time Hours (23:00-07:00)                 |                      |                    |             |
| Calculated continuous noise (1 hour) at façade | 23                   | 27                 | 32 dBA      |
| Correction for possible intermittency          | +3 dB                |                    |             |
| Corrected noise rating level at façade         | 26                   | 30                 | 35 dBA      |
| Representative background noise level          | 37 dBA               |                    |             |
| Difference                                     | -11 dB               | -7 dB              | -2 dB       |

- 7.7 The above noise impact assessment, undertaken in accordance with BS 4142, shows that the predicted noise rating levels from the proposed equipment are below the representative background sound levels at all assessed residential noise-sensitive receptors during the peak, off-peak and night-time periods. The predicted margins range from 2 dB to 11 dB below the representative background sound level, indicating a low impact under typical operating conditions.
- 7.8 At 33 Sambourne Gardens and 44 Weymouth Street, the predicted rating levels meet or exceed Wiltshire Council's preferred design objective of 5 dB below the typical background sound level during all assessed periods. Regal Court represents the controlling receptor, where the predicted rating levels are 2 dB below the representative background sound level which would also be considered to have a low impact, however, noise levels remain 3 dB above the Council's preferred design objective.
- 7.9 The revised scheme incorporates noise mitigation through a reduction in the number of proposed jet wash bays and EV charging units, together with relocation of the equipment farther from nearby residential properties. Given the height of Regal Court, conventional localised screening would provide limited benefit to the upper floors.

- 7.10 On this basis, and taking account of the lower predicted impacts at the other nearby receptors, the revised scheme is considered to represent a reasonable balance between noise control and the operational requirements of the development.

## 8.0 CONCLUSIONS

- 8.1 Quantum Acoustics have undertaken an assessment of environmental noise emissions from proposed new jet wash equipment with associated plant, air combi units and EV chargers to nearby noise-sensitive receptors.
- 8.2 Environmental plant noise emission criteria have been proposed based on the survey results and in accordance with BS 4142 and the Local Authority's requirements.
- 8.3 The proposed layout has been revised to reduce the number of jet wash bays and EV charging units and to relocate the remaining equipment farther from the nearest residential receptor.
- 8.4 Noise mapping has been undertaken to predict environmental noise emissions from the revised scheme. The predicted rating levels are at most 2 dB below the representative background sound levels at the nearest residential receptor, indicating a low impact in accordance with BS 4142, depending on context.
- 8.5 The predicted rating levels remain 3 dB above Wiltshire Council's preferred design objective of 5 dB below the typical background sound level. Given the height of the nearest residential receptor, further localised screening would provide limited benefit to the upper floors.
- 8.6 On this basis, the revised scheme is considered to represent a reasonable balance between noise control and the operational requirements of the development. No further practicable attenuation measures are considered necessary.



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