



ACOUSTIC
CONSULTANTS LTD

Noise Impact Assessment

**Proposed Office to Residential Conversion
Green Square, Chippenham**

Reference: 12255/LN

Client

Juniper Homes Limited

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The report has been prepared in good faith, with all reasonable skill and care, based on information provided or available at the time of its preparation and within the scope of work agreement with the Client. We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above. The report is provided for the sole use of the named Client and is confidential to them and their professional advisors. No responsibility is accepted to other parties.

The report limits itself to addressing solely on the noise, acoustic, and vibration aspects as included in this report. We provide advice only in relation to noise, vibration and acoustics. It is recommended that appropriate expert advice is sought on all the ramifications (e.g. CDM, structural, condensation, fire, legal, etc.) associated with any proposals in this report or as advised and concerning the appointment. It should be noted that noise predictions are based on the current information as we understand it and, on the performances noted in this report. Any modification to these parameters can alter the predicted level. All predictions are in any event subject to a degree of tolerance of normally plus or minus three decibels. If this tolerance is not acceptable, then it would be necessary to consider further measures.

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1. Introduction

Juniper Homes Limited have appointed Acoustic Consultants Limited to undertake a noise impact assessment for the proposed Prior Approval residential development at an existing office building at Methuen Park, Corsham, Chippenham SN14 0GU.

This report provides the results of a noise survey conducted on the site and an assessment of external industrial and commercial noise on the development.

The following assessment has been undertaken in accordance with the National Planning Policy Framework.

2. Site and Location

The site is located in a mixed residential commercial area. To the north and to the south are residential areas with commercial properties to the north, southeast and west.

Two hand car washes are located close to the site, one to the north and one to the east. The Car Spa to the north, operated between 09:00 and 17:30, while GKA Hand Car Wash operated between 08:30 and 17:30. GKA Hand Car Wash was not audible at the site.

There are office buildings immediately to the west and to the south of the proposed location, neither of these had audible plant impacting on the building.

To the northwest is a Sainsburys supermarket where there was no audible plant at the location of the proposed dwellings. The Sainsburys is open during daytime hours only 07:00-22:00.

The following figures show the site location and the location of the identified commercial sites in the vicinity.

Figure 1: Commercial sites surrounding the proposals



3. Planning and Noise

The development falls under Class MA under Prior Approval of the the Town and Country Planning (General Permitted Development) (England) Order 2015.

The impact of noise upon the development is limited as follows:

Condition MA.2.(d)

MA.2.—(1) Development under Class MA is permitted subject to the following conditions.

(2) Before beginning development under Class MA, the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to—

(a) transport impacts of the development, particularly to ensure safe site access;

(b) contamination risks in relation to the building;

(c) flooding risks in relation to the building;

(d) impacts of noise from commercial premises on the intended occupiers of the development;

The aim of this requirement is to protect the existing ongoing commercial activity from restriction through agent of change principles.

It does not require the assessment or control of overall environmental noise impact on residential amenity of the new dwellings (such as that from road traffic).

4. Noise Monitoring

An attended noise monitoring exercise was undertaken at the site on the 30th of September 2026 and the 1st of October 2026.

The purpose of the survey was to identify, measure and quantify noise from commercial sources as well as the general noise climate of the area.

4.1. Monitoring Equipment

Sound Pressure Levels were measured using a Class 1 sound level meter with a half-inch condenser microphone, using the 'fast' setting. The equipment is checked regularly using a Quality System meeting the requirements of British Standard EN ISO/IEC 17025:2017 "General requirements for the competence of testing and calibration laboratories"; in accordance with British Standard EN 10012:2003 "Measurement management systems. Requirements for measurement processes and measuring equipment"; and traceable to the National Standards.

Table 1: Equipment and Calibration Status

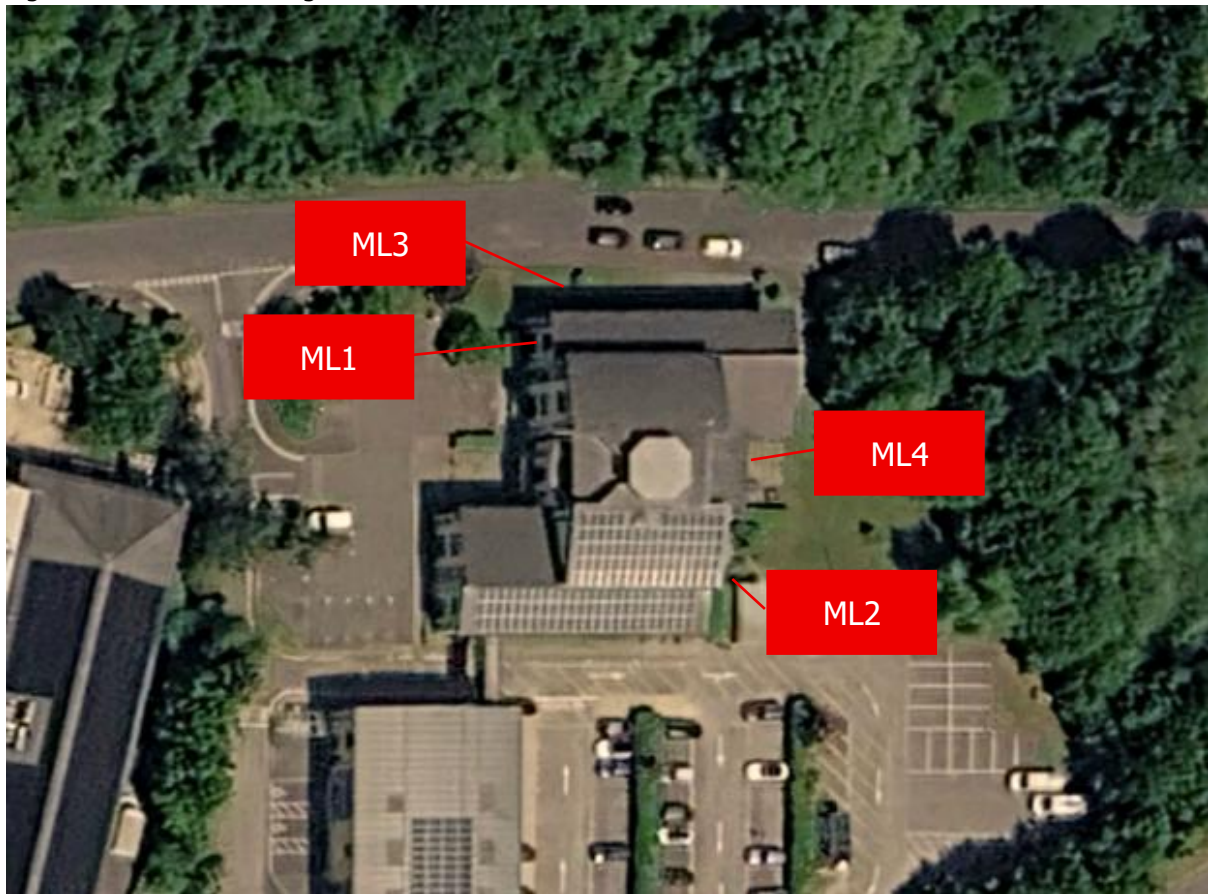
Equipment Description / Manufacturer / Type	Serial Number	Date of Calibration	Calibration Certification Number
SLM, NTI, XL2	A2A-09705-E0	23/09/2021	39023
Pre-Amp, NTI, MA220	5332	23/09/2021	39023
Microphone, NTI, MC230A	A14374	23/09/2021	39022
Calibrator, NOR-1251	35230	23/09/2021	39021
SLM, Svantek, 977A	69510	09/03/2022	1501934-1
Pre-Amplifier, Svantek, SV12L	73650	09/03/2022	1501934-1
Microphone, ACO Pacific, 7052E	70151	09/03/2022	1501934-1
Calibrator, Larson Davis, CAL200	17892	09/03/2022	1501934-2

The measurement systems were checked before and after use with the calibrators, system A2A-09705-E0 measured a drift of +0.1dB after the survey, and system 69510 measured a drift of 0dB after the survey. These calibrations are not expected to adversely affect the data obtained.

4.2. Monitoring Procedure

Four monitoring locations, designated ML1–ML4, were established as shown in the figure below. The microphones at ML1 and ML2 were mounted on tripods 4.5 metres above ground level in façade positions outside first-floor windows. The microphones at ML3 and ML4 were mounted on tripods 1.5 metres above ground level in free-field positions. The sound level meters recorded consecutive 15-minute periods with a one-second time history throughout the survey.

Figure 2: Noise Monitoring Locations



4.3. Weather Conditions

During the survey, conditions were dry, with wind speeds ranging from 2 to 7 m/s and variable cloud cover. The weather conditions are not expected to have adversely affected the measured data.

Table 2: Weather Conditions During Survey

Survey Date	Wind Speed (m/s)	Prevailing Wind Direction	Average Air Temperature (°C)	Precipitation (time/hrs)	Cloud Cover (%)
30/09/2026	4	WSW	≈ 20	0	≈ 25
01/10/2026	5	S	≈ 17	0	≈ 25

4.4. Monitoring Location Notes

4.4.1. ML1

The noise climate at Monitoring Location 1 was primarily road traffic from the A350 West Cepen Way and from Methuen Park.

The measured noise levels at this location are as follows:

Table 3: Summary of Measured Data: ML1

Period	dB LA90,T		dB LAeq,T	
	Range	Mode	Range	Mode
11:15-13:15	50-52	51	53-58	54

Noise from The Car Spa directly to the north was occasionally just audible over road traffic noise but did not affect the measured results and is not considered to have an observed effect on the development site.

4.4.2. ML2

Monitoring location 2 was placed to the east out of a first-floor window. During this monitoring period the main source of noise was road traffic to the north on Methuen Park and on A4 Bath Road. There was also piling noise from the nearby residential development site.

The measured noise levels at this location are as follows:

Table 4: Summary of Measured Data: ML2

Period	dB LA90,T		dB LAeq,T	
	Range	Mode	Range	Mode
11:15-13:15	44-46	45	49-54	51

No industrial or commercial noise affected this measurement location.

4.4.3. ML3

This monitoring location was placed in order to measure noise levels from The Car Spa directly to the north over a two hour period in order to determine the measured levels of this on the northern façade of the building.

The measured noise was primarily from road traffic from the A350 West Cepen Way and from Methuen Park.

The measured noise levels at this location are as follows:

Table 5: Summary of Measured Data: ML3

Period	dB LA90,T		dB LAeq,T	
	Range	Mode	Range	Mode
11:00-13:15	48-51	50	52-55	54

There was a 25 minute period where there was plant from the car wash to the north that increased the noise levels by around 1.5dB(A) temporarily.

During this measurement period with a measured noise level of 53 dB $L_{Aeq, T}$ 30 minutes.

4.4.4. **ML4**

Monitoring location 4 was located to the east of the site and was partially shielded from road traffic.

The main sources of noise at this location was intermittent road traffic and piling noise from the residential construction site.

The measured noise levels at this location are as follows:

Table 6: Summary of Measured Data: ML4

Period	dB $L_{A90, T}$		dB $L_{Aeq, T}$	
	Range	Mode	Range	Mode
11:00-12:00	39-46	43	46-53	51

No industrial or commercial noise affected this measurement location.

4.5. **Summary of Results**

At monitoring locations 1, 2 and 4 the noise climate was due to road traffic from the surrounding road network with noise from the nearby residential construction to the east.

These noise sources are not relevant to the requirements of Prior Approval applications. There was no impact from commercial or industrial activities at these locations.

At monitoring location 3 occasional noise from what was believed to be a compressor at the car wash was audible for a short period.

To determine the level of impact an assessment to BS4142 will be undertaken.

5. Assessment of Industrial Noise

As part of the change of use assessment, industrial noise must be assessed on the proposed site.

At monitoring location 3 occasional noise from what was believed to be a compressor at the car wash was audible for a short period.

For industrial and commercial noise, the most relevant guidance is provided within British Standard 4142:2014+A1:2019. The methods described in the British Standard use outdoor sound levels to assess the likely effects of sound upon people who might be inside or outside a dwelling or other premise used for residential purposes.

5.1. **BS4142, Initial Assessment**

The initial estimate principle is that of establishing the 'difference' between the 'rating level' and the 'background sound level'. The 'rating level' is the 'specific sound level' of the source over a period of one hour during the day (07:00 to 23:00 hours) and over a period of 15 minutes during the night (23:00 to 07:00 hours). Clause 9 entitled 'Rating Level' states:

"Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level. Where such features are present at the assessment location, add a character correction to the specific sound level to obtain the rating level."

An acoustic character correction should be added to the 'specific sound level' if it exhibits any tonality, impulsivity, other specific characteristics and/or intermittency at the assessment location. The value of the character correction varies, dependent on the prominence of the character of the sound source at the assessment location.

In Clause 11 of the Standard, entitled 'Assessment of the Impacts', it states:

"Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level (see Clause 8) from the rating level (see Clause 9), and consider the following.

- *Typically, the greater this difference, 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 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."

The assessment is as follows:

- From the measurement data the typical background sound level has been determined as 50dB $L_{A90,T}$.
- The measured ambient noise level (the noise level with the specific noise source and other sounds present) was 53 dB $L_{Aeq,T}$.
- The measured residual noise level (the noise level without the specific noise source present) was 1.5dB lower at 51.5dB $L_{Aeq,T}$.
- To determine the specific sound level of the commercial/industrial noise the ambient sound level is corrected for the residual sound level. This give a specific sound level of 48dB $L_{Aeq,T}$.
- Noise from the plant was tonal in nature, this was just distinguishable over the existing noise climate. A character correction of +2 decibels has been applied for the barely perceptible character.
- The resultant Rating level is 50dB $L_{Ar,T}$.
- The Rating level does not exceed the Background Sound Level.

According to the British Standard this is an indication of low impact and in terms of planning is considered to have No Observed Adverse Effect.

On the basis of the above, there are no adverse effects from industrial/commercial noise upon the proposed residential development.

6. Summary and Conclusions

Juniper Homes Limited have appointed Acoustic Consultants Limited to undertake a noise impact assessment for the proposed Prior Approval residential development at an existing office building at Methuen Park, Corsham, Chippenham SN14 0GU.

This report provides the results of a noise survey conducted on the site and an assessment of external industrial and commercial noise on the development.

The noise climate is dominated by road traffic which is not a consideration within Prior Approval applications.

The only commercial/industrial noise affecting the site was occasional plant noise, believed to be a compressor at a car wash, was audible for a short period.

An assessment to BS4142 has been undertaken of this noise source. The Rating level does not exceed the Background Sound Level.

According to the British Standard this is an indication of low impact and in terms of planning is considered to have No Observed Adverse Effect.

On the basis of the above, there are no adverse effects from industrial/commercial noise upon the proposed residential development.

7. Appendix 1 – Glossary of Acoustic Terminology

A-weighted sound pressure p_A – value of overall sound pressure, measured in pascals (Pa), after the electrical signal derived from a microphone has been passed through an A-weighting network.

A-weighted sound pressure level, L_{pA} – quantity of A-weighted sound pressure given by the following formula in decibels (dBA)

$$L_{pA} = 10 \log_{10} (p_A/p_0)^2$$

where:

p_A is the A-weighted sound pressure in pascals (Pa);
 p_0 is the reference sound pressure (20 μ Pa)

Background sound level, $L_{A90,T}$ – A-weighted sound pressure level that is exceeded by the residual sound assessment location for 90% of a given time interval, T, measured using weighting F and quoted to the nearest whole number of decibels

Break-in - noise transmission into a structure from outside.

Decibel (dB) – The decibel is the unit used to quantify sound pressure levels. The human ear has an approximately logarithmic response to acoustic pressure over a very large dynamic range (typically 20 micro-Pascals to 100 Pascals). Therefore, a logarithmic scale is used to describe sound pressure levels and also sound intensity and power levels. The logarithms are taken to base 10. Hence an increase of 10 dB in sound pressure level is equivalent to an increase by a factor of 10 in the sound pressure level (measured in Pascals). Subjectively, this increase would correspond to a doubling of the perceived loudness of sound.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$ – value of the A-weighted sound pressure level in decibels of continuous steady sound that, within a specified time interval, $T = t_2 - t_1$, has the same mean-squared sound pressure as a sound that varies with time, and is given by the following equation:

$$L_{Aeq,T} = 10 \lg_{10} \left\{ (1/T) \int_{t_1}^{t_2} [p_A(t)^2/p_0^2] dt \right\} \quad (1)$$

where:

p_0 is the reference sound pressure (20 μ Pa); and

$p_A(t)$ is the instantaneous A-weighted sound pressure (Pa) at time t

NOTE The equivalent continuous A-weighted sound pressure level is quoted to the nearest whole number of decibels.

Facade level – sound pressure level 1 m in front of the façade. Facade level measurements of L_{pA} are typically 1 dB to 3 dB higher than corresponding free-field measurements because of the reflection from the facade.

Free-field level – sound pressure level away from reflecting surfaces. Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

Octave and Third Octave Bands – The human ear is sensitive to sound over a range of frequencies between approximately 20 Hz to 20 kHz and is generally more sensitive to medium and high frequencies than to low frequencies within the range. There are many methods of describing the frequency content of a noise. The most common methods split the frequency range into defined bands, in which the mid-frequency is used as the band descriptor and in the case of octave bands is double that of the band lower. For example, two adjacent octave bands are 250 Hz and 500 Hz. Third octave bands provide a fine resolution by dividing each octave band into three bands. For example, third octave bands would be 160 Hz, 250 Hz, 315 Hz for the same 250 Hz octave band.

Sound pressure level – Sound pressure level is stated on many of the charts. It is the amplitude of the acoustic pressure fluctuations in a sound wave, fundamentally measured in Pascals (Pa), typically from 20 micro-Pascals to 100 Pascals, but commonly simplified onto the decibel scale.

Sound reduction index, R – laboratory measure of the sound insulating properties of a material or building element in a stated frequency band.

Specific sound level, $L_s = L_{Aeq,Tr}$ – equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T_r .

Structure-borne noise – audible noise caused by the vibration of elements of a structure, the source of which is within a building or structure with common elements.

Rating level, $L_{Ar,Tr}$ – Specific sound level plus any adjustment for the characteristic features of the sound.

Reverberation Time, T – The reverberation time is defined as the time taken for a noise level in an enclosed space to decay by 60 dB from a steady level once the noise source has stopped. It is measured in seconds. Often a 60 dB decay cannot be measured so the reverberation time is measured over a lesser range and corrected back to the time for a 60 dB drop assuming a constant decay rate. Common parameters are T_{20} (time taken for a 20 dB decay multiplied by three) and T_{30} (time taken for a 30 dB decay multiplied by two).

Vibration Dose Value, VDV – measure of the total vibration experienced over a specified period of time.

Estimated Vibration Dose Value, $eVDV$ – estimation of the total vibration experienced over a specified period of time. This is usually based on the number of events and shortened measurement data.

Weighted sound reduction index, R_w – Single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies. The weighted sound reduction index is used to characterize the insulation of a material or product that has been measured in a laboratory (see BS EN ISO 717-1).



ACOUSTIC
CONSULTANTS LTD

Head Office: 194 West Street, Bedminster, Bristol, BS3 3NB
T: 0117 986 2956

www.acoustic-ltd.co.uk

Registered Office: 194 West St, Bristol, BS3 3NB Registered No: 8544901