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Acoustic Survey and Assessment for Proposed detached dwelling on land next to 40 Cambrian Street, Manchester, M40 7EG.

Prepared for:

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1. Introduction

1.1. Martin Environmental Solutions has been commissioned to undertake an acoustic survey and assessment to support a planning application for the erection of a detached dwelling on land next to 40 Cambrian Road, Manchester, M40 7EG.

Site Location and Context

1.2. The development site is situated to the north of Cambrian Street, on the corner of Cambrian Street and Upper Cyprus Street. To the southeast are existing terrace housing, to the south open land west more residential housing and to the north along Upper Cyprus Street and number of industrial units. The nearest behind the site a large car sales business, beyond which are old industrial mills with various car maintenance businesses.

1.3. An aerial Photograph is enclosed in Figure 1, together with a proposed layout drawing in Figure 2.

1.4. The report has been produced to clarify the potential impact on the proposed development and to identify mitigation measures if required to ensure the development is appropriate in terms of noise impact.

2. Policy and Guidance

2.1. The impact of noise can be a material consideration in the determination of planning applications. The planning system has the task of guiding development to the most appropriate locations. It is recognised that on occasions it will be difficult to reconcile some land uses, such as housing, hospitals, or schools, with other activities that generate high levels of noise. However, the planning system is tasked to ensure that, wherever practicable, noise-sensitive developments are separated from major sources of noise (such as road, rail and air transport and certain types of industrial development).

2.2. The Government's publication of the National Planning Policy Framework (NPPF), updated in December 2024, states that planning policies and decisions should prevent new and existing development from contributing to or being put at unacceptable risk from, of being adversely affected by unacceptable levels of noise pollution.

2.3. The Government have also issued the Noise Policy Statement for England (NPSE). The NPSE clarifies the Government's underlying principles and aims in relation to noise and sets a vision to promote good health and a good quality of life through the effective management of noise while having regard to the Government's sustainable development strategy. The NPSE aims to mitigate and minimise adverse impacts on health and quality of life through the effective management and control of noise.

2.4. The NPSE introduces the following terms, although no sound levels are given to represent these, many authorities have identified the sound level criteria in line with the World Health Organisation, BS8233:2014 and BS4142: 2014 levels. The terms introduced by the NPSE are:

NOEL – No Observed Effect Level; this is the level of noise exposure below which no effect at all on health or quality of life can be detected.

LOAEL – Lowest Observed Adverse Effect Level. this is the level of noise exposure above which adverse effects on health and quality of life can be detected.

SOAEL – Significant Observed Adverse Effect Level. This is the level of noise exposure above which significant adverse effects on health and quality of life occur.

2.5. The Planning Practice Guidance on Noise supports the above and highlights that plan-making and decision making need to take account of the acoustic environment and 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 a good standard of amenity can be achieved.

In line with the NPSE this includes whether the overall effect of the noise exposure would be above or below the SOAEL.

2.6. Other commonly used examples of standards utilised by Local Planning authorities for the consideration of noise impacts include comparison of the likely noise levels to be experienced at a development, with levels that have been recommended by the World Health Organisation (WHO) as Guidelines for the prevention of Community Noise Annoyance and within BS8233: 2014.

2.7. The WHO recommended noise levels for outdoor amenity areas (gardens) that should not be exceeded are 55dB(A) $L_{Aeq,16hr}$ in order to avoid 'Serious Community Annoyance or 50dB(A) $L_{Aeq,16hr}$ to avoid 'Moderate Community Annoyance' during the day. For indoor levels WHO set 35dB(A) $L_{Aeq,16hr}$ during the day to prevent Moderate Annoyance and 30 dB(A) $L_{Aeq,8hr}$ at night to prevent sleep disturbance.

2.8. The WHO guidance also recommends that maximum sound levels at night should not regularly exceed 45dB(A) within bedrooms to prevent sleep disturbance. Regularly is considered to be more than 10 times during any 8-hour night-time period.

2.9. BS 8233:2014 'Guidance on sound insulation and noise reduction for buildings' also specifies desirable noise levels to be achieved inside dwellings.

2.10. BS 8233:2014 'Sound insulation and noise reduction for buildings – Code of Practice' also specifies desirable noise levels to be achieved inside dwellings. BS 8233 presents two levels, the first between the hours of 07:00 – 23:00 and the second between 23:00 -07:00.

2.11. The daytime period suggests internal noise levels of 35dB $L_{Aeq,16hr}$, for resting in living rooms and bedrooms while for night-time a level of 30dB LAeq,8hr is recommended. Criteria for external areas mirrors that within the WHO guidance.

2.12. Another commonly used standard is British Standard 4142:2014 'Method for rating industrial and commercial sound' compares the sound predicted by the source in question against the background, L_{A90} sound levels.

2.13. The "residual" L_{Aeq} measurement is then subtracted from the "ambient" L_{Aeq} measurement (with the sound source) to calculate the sound level created by the "problem" sound alone -termed the "specific" sound level.

2.14. If the "problem" sound is tonal, such as whine or hum, or if it is impulsive such as bangs or clatters or if it is irregular enough to attract attention a correction is added to the "specific level" to produce the "rating level". The "background" L_{A90} measurement is then compared against the "rating level".

2.15. If the "rating level" exceeds the "background" by around 10dB(A) or more this "indicates a significant adverse impact". A difference of around 5dB(A) 'indicates an adverse impact. The lower the commercial noise level is, the lower the likely impact.

2.16. In addition, the 'ProPG Planning & Noise, Professional Practice Guidance on Planning & Noise, New Residential Development' provides a 4-staged approach to undertaking a risk assessment in relation to anticipated sound levels at new residential development and the provision of mitigation measures. The guidance is principally aimed at sites exposed predominantly to noise from transportation sources.

2.17. The first stage consists of an initial noise risk assessment, based on indicative day and night-time *noise* levels. Simply put, the higher the ambient noise in an area the greater the impact. The levels given are shown below although it should be noted that these are in excess of both the WHO and BS 8233: 2014 guidance.

Noise Risk Category*	Potential Effect if Unmitigated	Pre-Planning Application Guidance
0 – Negligible $L_{Aeq,16hr}$ **<50dB** $L_{Aeq,8hr}$ **<40dB**	May be noticeable but no adverse effect on health and quality of life	In this category the development is likely to be acceptable from a noise perspective, nevertheless a good acoustic design process is encouraged to improve the existing environment and/or safeguard against possible future deterioration and to protect any designated tranquil areas. A noise assessment may be requested to demonstrate no adverse impact from noise. Application need not normally be delayed on noise grounds.
1 – Low $L_{Aeq,16hr}$ **50-63dB** $L_{Aeq,8hr}$ **40-55dB**	Adverse effect on health and quality of life	In this category the development may be refused unless a good acoustic design process is followed and is demonstrated via a Level 1 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised and that a significant adverse impact will not arise in the finished development. Planning conditions and other measures to control noise may be required.
2 – Medium $L_{Aeq,16hr}$ **63-69dB** $L_{Aeq,8hr}$ **55-60dB** L_{AFmax} **>80dB****	Significant adverse effect on health and quality of life	In this category the development is likely to be refused unless good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement which confirms how the adverse impacts of noise on the new development will be mitigated and minimised, and clearly demonstrates that a significant adverse noise impact will not arise in the finished development. Planning conditions and other measures to control noise will normally be required.
3 – High $L_{Aeq,16hr}$ **>69dB** $L_{Aeq,8hr}$ **>60dB** L_{AFmax} **>80dB****	Unacceptable adverse effect of health and quality of life	In this category the development is very likely to be refused on noise grounds, even if a good acoustic design process is followed and is demonstrated via a Level 2 Acoustic Design Statement. Applicants are advised to seek expert advice on possible mitigation measures. Advice on the circumstances when the refusal of a new housing on noise grounds should normally be anticipated is included in the ProPG.

2.18. Stage 2, consists of a full assessment of the prevailing ambient noise and requires 4 elements to be considered:

I. Element 1 – Good Acoustic Design
II. Element 2 – Internal Noise Level Guidelines
III. Element 3 – External Amenity Area Noise Assessment
IV. Element 4 – Assessment of Other Relevant Issues

2.19. A good acoustic design is implicit in meeting the requirements of the NPPF and can help to resolve many potential acoustic issues.

2.20. Details of the criteria considered suitable are provided above for both internal and external sound levels. Element 4 includes such issues as local and national policy, likely occupants, wider planning objectives.

3. The Assessment

The development

3.1 The proposed development consists of a detached dwelling on the site.

3.2 Figure 2 below provides an overview of the proposed development.

Existing Situation.

3.3 The site is currently open to access, with no suitable position to leave a sound level meter unattended. Therefore, in order to obtain representative background sound levels for the area on site attended monitoring was undertaken on 21st January 2026.

3.4 A Cirrus Optimus Green sound level meter was utilised for the monitoring. The meter was placed at a height of ~1.3m toward the front western corner. This position is close to both roads and would experience minimal barrier attenuation from the 3.2m concrete fence to the rear.

3.5 The dominant source of sound identified was from the road as such monitoring was undertaken in accordance with the '*Department for Transport- Welsh Office; Estimating Road Traffic Noise 1988*'.

3.6 The meter was field calibrated at the start and end of the monitoring period with no significant variation and full laboratory calibration certificates are available on request.

3.7 The weather during the monitoring was dry with little wind <5m/s.

3.8 The full results are shown in Appendix A, the results identified sound levels of 64.7dB(A) during the day, 56.3dB(A) at night and the maximum sound levels, not regularly exceeded were identified at 77.9dB(A) during the monitoring period. This figure will be utilised for the night-time maximum value.

3.9 Background sound levels were dominated by passing traffic, with very little sound observed from the nearby industrial units. Conversations were held with a number of the businesses including the nearest ones to ascertain whether the activities were typical and all confirmed they were.

3.10 Given a 15dB attenuation[1] for an open window the sound levels to be experienced by the future occupants are slightly above those identified within the guidance documents detailed in section 2 of the report. Therefore, further mitigation measures are required.

3.11 A standard 6/12/6 double glazing unit will, when closed, provide a sound reduction, $R_w(C;C_{tr})$, of 36(-2;-5), see Appendix B. Therefore, adequate to protect the future occupants of the accommodation from the prevailing environmental sound levels.

3.12 Therefore, to ensure that suitable internal sound levels are maintained it is recommended that all habitable rooms are fitted with the 6/12/6 standard double glazing units.

3.13 In order to be able to keep windows closed additional ventilation provision must be made for the property. As such it is recommended that a ventilation system is used incorporating acoustic trickle ventilators for all windows to habitable rooms to the proposed properties. The ventilators must achieve a similar of better performance to the windows when open and a number of suitable models are available from suppliers including the Greenwood DN Vent providing 34dB (C_{tr}) attenuation or the Titon, Trimvent Select S13 Ventilator providing 33dB (C_{tr}) attenuation. Other models and manufacturers area available.

3.14 Care must be taken to ensure that windows are well fitted and gaps between the window frame and the brick work are minimised. Where gaps do occur, these should be filled with a suitable acoustic material, not expandable foam. The window frame should be sealed across the full depth of the frame and not just around the edges. This will ensure that sound does not 'leak' around the edge of the frame.

3.15 It is worth noting that the above provision does not prohibit the short opening of windows for purge ventilation of the property. The recommended trickle ventilation is design to achieve the required background ventilation for the property.

3.16 A consideration of the Building Regulations, and Approved Document O requirements around overheating is essential given the need for closed windows. The Regulations

[1] BS8233: 2014; Guidance on sound insulation and noise reduction for buildings

require adequate provision to be made for the removal of heat from the building and to limit solar gain.

3.17 In terms of the impact from the nearby industrial sources and a consideration of a BS4142:2014 assessment. Not particularly sounds were identified on site from the units during the monitoring period. Staff at units along Upper Cyprus Street were spoken to and while activities were underway inside the buildings these were not evident on the street. No external plant was identified.

3.18 A large wall is located to the rear of the site which will provide a substantial barrier to the any potential noise emissions from the movement of vehicles in the adjacent yard, which only operates during the daytime. The barrier would provide upwards of 20dB attenuation to the ground floor and at least 5 dB (line of sight) to the first floor. The vehicle movements are not dissimilar to that from the traffic on the adjacent road networks, although at a lower speed.

4 Conclusion

4.1 On-site monitoring has identified existing background sound levels will result in an adverse impact on the proposed development. As such additional mitigation measures are required.

4.2 These have been identified as standard double-glazing units with trickle window vents to ensure a suitable level of ventilation is achieved, subject to building regulation Document O compliance.

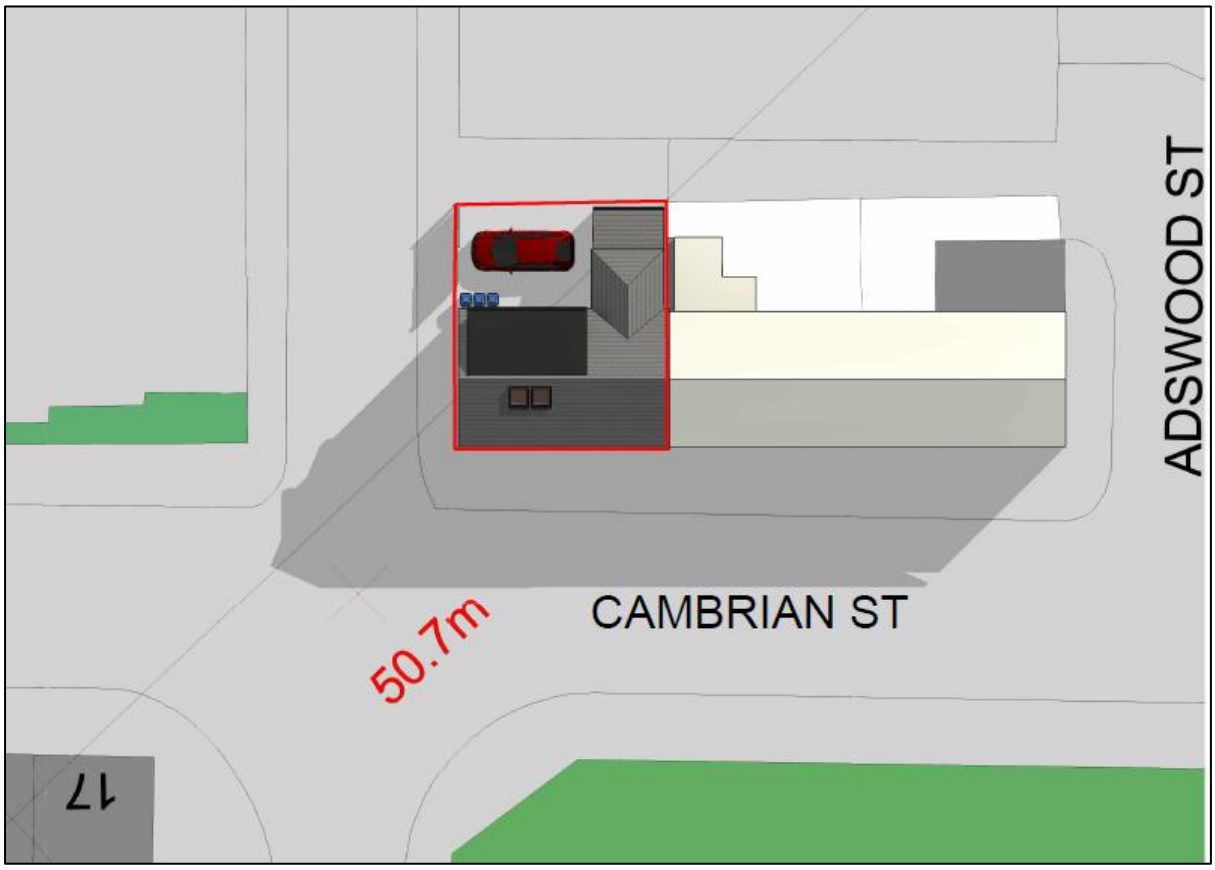
4.3 The inclusion of the above mitigation measures to all habitable rooms will ensure that the internal sound levels are acceptable and will result in a No Observe Effect on the future residents in line with the Noise Policy Statement for England.

4.4 As such the development will meet the objectives of the National Planning Policy Framework in ensuring that no significant adverse impact is experienced by the future residents. The development is therefore considered to be acceptable in terms of noise.

Figure 1 – Aerial Photograph



Figure 2 – Proposed Layout Plan



Appendix A – Full Monitoring Results

Time	Duration	L_{Aeq} (dB)	L_{AMax} (dB)	L_{A10} (dB)	L_{A90} (dB)
21/01/2026 11:00	01:00:00	63.4	90.4	67.1	50.0
21/01/2026 12:00	01:00:00	64.2	84.4	67.9	51.1
21/01/2026 13:00	01:00:00	63.9	84.1	68.1	51.4
∑ 3x $L_{A10(1hr)}$/3				67.7	

Welsh Office Calculation of Road Traffic Noise methodology

The method uses the sum of three consecutive 1-hour L_{A10} monitoring periods to calculate the $L_{Aeq,16hr}$ sound level, with a correction to turn this into the night-time $L_{Aeq,8hr}$ level using the following calculations.

$$L_{A10(18hr)} = \sum 3x\ L_{A10(1hr)}/3 - 1dB$$

$$L_{Aeq(16hr)} = L_{A10(18hr)} - 2dB$$

$$L_{A10(18hr)} = 67.7 - 1dB$$

$$L_{A10(18hr)} = 66.7$$

$$L_{Aeq(16hr)} = 66.7 - 2dB$$

$$\mathbf{L_{Aeq(16hr)} = 64.7dB(A)}$$

1.1 For night-time sound levels,

$$L_{night} = 0.90\ x\ L_{A10(18hr)} - 3.77dB$$

$$L_{night} = 0.90\ x\ 66.7 - 3.77dB$$

$$L_{night,8hr} = \mathbf{56.3dB(A)}$$

Appendix B – Standard Glazing Attenuation

Sound Insulation Prediction (v10.0.6)

Program copyright Marshall Day Acoustics 2023 | Margin of error is generally within Rw ±3 dB

Date: 14/09/2025

Job Name:

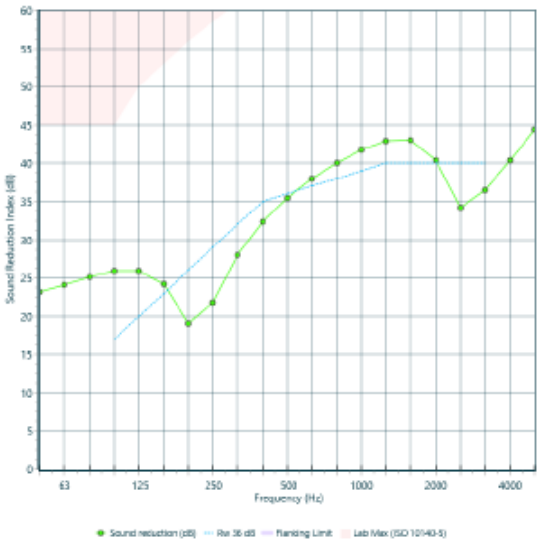


Rw 36 dB
C -2 dB
Ctr -5 dB

System description

Pane 1	1 x 6 mm Glass
Cavity	: 12 mm
Pane 2	1 x 6 mm Glass
Details	Energy-based model, Panel Size 1.3 m x 1.5 m, Partition surface mass = 29.2 kg/m², Mass-air-mass resonant frequency = : 200 Hz

freq. (Hz)	R (dB)	Roct (dB)
50	23	
63	24	24
80	25	
100	26	
125	26	25
160	24	
200	19	
250	22	22
315	28	
400	32	
500	35	35
630	38	
800	40	
1000	42	41
1250	43	
1600	43	
2000	40	38
2500	34	
3150	36	
4000	40	39
5000	44	



Appendix C - Report Author Details

This report has been produced by Neil Martin, BSc (Hons), PGDip, CEnvH MCIEH, MIOA.

Neil is the principal acoustic consultant at Martin Environmental Solutions Ltd, a consultancy company specialising in Environmental Health disciplines including environmental noise assessment and control. He holds a Bachler's degree in Environmental Health and Diploma in Acoustics. He is a Chartered Member of the Chartered Institute of Environmental Health and a Full member of the Institute of Acoustics.

Neil has over 20year's experience working within a Local Authority Environmental Health setting, principally in the Environmental Protection and Public Health areas and has been working as an acoustic consultant since 2011.

Since its formation, Martin Environmental Solutions has advised and assisted many groups including residents, developers and local authorities about the problems of noise and vibration in the environment and the possible solutions. Neil also acts as an expert witness in the area of acoustics.