Azymuth Acoustics UK

Professional Acoustic Services

Noise Impact Assessment

Ref: Z71708.1

White Moss Road
(VASA Club)
Blackley,
Manchester

On behalf of

Chapter WBL Ltd.

&

Jigsaw Homes Group





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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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1.0 Introduction

Azymuth Acoustics UK (henceforth Azymuth) has been contracted by Chapter WBL Ltd perform a Noise Impact Assessment (NIA) in relation to White Moss Road, Blackley located in Manchester.



Figure 1 – Site plan of proposed development

This noise impact assessment is intended to provide information relating to potential noise levels affecting the site in order to support the detailed planning application for the residential development. In particular, the report sets out the following details:

- The results of a baseline noise survey undertaken in the vicinity of White Moss Road, Blackley.
- The appropriate assessment criteria and guidance relating to noise in the environment as associated with this kind of development
- Recommendations to meet the targets as set out by the assessment criteria

All drawings and information provided by the client is up to date and correct at time of writing.

A noise impact assessment (NIA) for a new residential development is carried out to determine suitable acoustic mitigation (external façade and glazing recommendations) and window operation strategies in accordance with ADO overheating. However, compliance

with the NIA does not guarantee compliance with other Building Regulations requirements, such as ADL (energy efficiency) and ADO (overheating).

In practice, the ventilation and window strategies needed to meet ADL and ADO criteria—such as keeping windows closed for overheating control or security, or achieving higher ventilation rates—may conflict with the assumptions used in the acoustic assessment.

Where this occurs, the requirements of ADL and ADO should take precedence, as they are critical to overall building performance and occupant safety. The final design should therefore be based on a coordinated approach, ensuring that the ventilation strategy satisfies ADL and ADO, even if this overrides aspects of the original noise assessment.

2.0 Baseline Noise Survey

2.1 Measurement Procedures

The instrumentation used for the NIA consisted of a SvanTek 971 type 1 precision sound level meter. The equipment was calibrated before and after measurements. The sound level meter measured A-weighted (fast response) noise levels as well as octave bands noise levels for all measurement record.

Daytime noise level measurements were undertaken between 10:59hrs and 14:38hrs on Friday 22nd May 2026. The night-time measurements were undertaken between 23:25hrs and 01:40hrs on Tuesday 5th June 2026 – Wednesday 6th June2026.

The noise measurements were undertaken using the sound level meter at the position(s) shown in Figure 2 below:

- Position 1 : Rochdale Rd (~5.0m from roadside)
- Position 2 : White Moss Rd (~5.0m from roadside)
- Position 3 : Proposed Parking area (~10m from Fire Station)



Figure 2 – Noise measurement position(s)

2.2 Summary of Measurements

2.2.1 Noise Survey

The following table summarises the results of the noise measurements undertaken at the proposed site in terms of the average daytime and night-time noise levels.

Location	Period	L_{AFmax}	L_{Aeq}	L_{A10}	L_{A50}	L_{A90}
Pos 1) Rochdale Rd	Day	78.2	67.3	68.2	64.8	60.7
Pos 1) Rochdale Rd	Night	72.8	62.1	63.8	56.3	46.5
Pos 2) White Moss Rd	Day	70.0	59.1	60.4	56.5	52.9
Pos 2) White Moss Rd	Night	66.7	53.5	56.7	49.9	42.3
Pos 3) Proposed Parking Area	Day	67.3	55.9	57.7	54.8	52.3
Pos 3) Proposed Parking Area	Night	61.8	51.5	54.6	48.6	43.0

Table 1 – Summary of noise measurements averaged from Appendix B

Azymuth assumes that all noise levels measured on-site during the baseline noise survey are typical of the site.

Full results of the noise levels recorded during the course of the survey are included in Appendix B of this report.

2.3 Description of Noise Climate

The main source of noise affecting the site originates from traffic on Rochdale Road and White Moss Road. As the location is in close proximity to a fire station, fire engines are commonly found passing through Rochdale Road.

It is important to consider if the 10th highest L_{Amax} exceeds 65dB to ensure the glazing chosen for each elevation is compliant with ADO noise criteria (refer to section 3.6).

The highest recorded L_{Amax} for position 1 close to Rochdale Road was measured at 84.7dB (seen in Appendix B). The 10th highest night-time value is likely to be close to this figure as many of these L_{Amax} are due to emergency vehicles using the fire station located adjacent to proposed development.

The highest recorded L_{Amax} at position 2 on White Moss Road was measured at 74.7dB. The 10th highest night-time value is likely to exceed 65dB with the average being 66.7dB.

The highest recorded L_{Amax} at position 3 on the proposed car park was measured at 68.1dB. The 10th highest night-time value is likely to be under 65dB as there are only 2 recorded instances of the L_{Amax} exceeding this value out of 8 measurement periods.

The weather during the measurement procedure was dry with wind speeds ranging around 5mph-8mph. All results were measured and calculated under the assumption that the noise climate is typical for the area.

3.0 Assessment Criteria

In order to assess the extent of any measures required in order to comply with suitable conditions relating to potential noise sources, Azymuth Acoustics UK has reviewed various guidance documents and standards, these include:

- ProPG: Professional Practice Guidance on Planning and Noise (New residential development)
- National Planning Policy Framework 2024
- British Standard 8233:2014
- World Health Organisation Guidelines on Community Noise 2018
- British Standard 4142:2014+A1:2019
- IOA Guide to Noise Requirements of Approved Document O 2024
- Acoustics Ventilation and Overheating Residential Design Guide 2020

3.1 ProPG: Planning and Noise - May 2017

This Professional Practice Guidance on Planning and Noise (ProPG) has been produced to provide practitioners with guidance on a recommended approach to the management of noise within the planning system in England. The National Planning Policy Framework (NPPF) encourages improved standards of design. The CIEH, IOA and the ANC have worked together to produce this guidance which encourages better acoustic design for new residential development and aims to protect people from the harmful effects of noise.

The Professional Practice Guidance on Planning and Noise States 'The recommended approach is intended to give the developer, noise practitioner, and decision maker an early indication of the likely initial suitability of the site for new residential development from a noise perspective and the extent of acoustic issues that would be faced'. It is important that acoustic design is reviewed at an early stage of the development process.

3.2 National Planning Policy Framework (NPPF) 2024

The NPPF provides guidance to local authorities taking into account noise in making planning decisions. Paragraph 185 of the National Planning Policy Framework (NPPF) states that planning policies and decisions should aim to:

- Mitigate and reduce to a minimum to a minimum potential adverse impacts resulting from new development – and avoid noise giving rise to significant adverse impacts on health and quality of life,
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason;

The NPPF states that the planning system should distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework. In addition, NPPF states that the planning system should 'prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability'.

3.3 British Standard 8233: 2014

BS 8233 provides a code of practice for the sound insulation of a variety of building types affected by general environmental noise. It provides recommendations for control of noise in and around buildings and suggests appropriate internal ambient noise level criteria / limits for a variety of different situations including residential properties.

The following table summarises the noise limits suggested by BS 8233 applying to residential properties:

Activity	Room	Good Design Range $L_{Aeq,T}$ dB	
		07:00-23:00hrs	23:00-07:00hrs
Resting	Living Room	35	-
Dining	Dining Room / Area	40	-
Sleeping (daytime resting)	Bedroom (at night)	35	30

Table 2 – Noise Limits for Residential Properties Suggested in BS 8233

BS 8233 also states that traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50dB $L_{Aeq,T}$, with an upper guideline value of 55dB $L_{Aeq,T}$, which would be acceptable in noisier environments.

3.4 World Health Organisation Environmental Noise Guidelines (ENG) 2018

The main purpose of the 2018 WHO guidelines is to provide recommendations for protecting human health from exposure to environmental noise originating from the following sources: transportation (road traffic, railway and aircraft), wind turbines and leisure activities.

The guidelines set out to define recommended exposure levels for environmental noise in order to protect population health. Exposure limits are average levels defined over a period of one year, measured outdoors in free field at the most exposed façade. It should be noted that the document does not provide guideline limit values for multiple noise sources in combination.

The 2018 guidelines supersede the Community Noise Guidelines from 1999. Nevertheless, the document recommends that all CNG indoor guideline values and any values not covered by the current guidelines should remain valid. As such, the following guidance would remain appropriate:

For protection against sleep disturbance inside dwellings, night-time noise levels should not exceed 30dB L_{Aeq} for continuous noise and 45dB L_{Amax} for typical single sound events (which are exceeded 15 times or more per night – see ProPG Appendix A.12 for more details).

To protect the majority of people from being seriously annoyed during the daytime, the outdoor sound level from steady, continuous noise (interpreted as noise from all sources combined) should not exceed 55dB L_{Aeq} on balconies, terraces and in outdoor living areas.

It should be noted that exposure levels defined in ENG and CNG are for guidance purposes as relates potential adverse health impacts and should not be interpreted as absolute limits or regulations.

3.5 British Standard 4142:2014+A1:2019

"Methods for assessing and rating industrial sound" describes methods for rating and assessing sound of an industrial and/or commercial nature. The methods described in this British Standard use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

- Typically, the greater the difference between background sound and industrial/commercial noise, the greater the magnitude of the impact.
- 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.
- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context.
- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context.

BS 4142 notes that: "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."

3.6 IOA Guide to Noise Requirements of Approved Document O 2024

Approved Document O 'Overheating' was released in December 2021 and came into effect in England on 15th June 2022. It introduces requirements for various types of residential premises to limit unwanted solar gains in summer and provide an adequate means to remove heat from the indoor environment (Requirement O1 (1)). Requirement O1(2)(a) of the regulation requires that account must be taken of the safety of an occupant, and their reasonable enjoyment of the residence. There is also a requirement (O2(b)) that mechanical cooling may only be used where sufficient heat cannot be removed from the indoor environment without it.

The guide aims to set out a method to demonstrate compliance to the Building Control Body of the noise constraints in Approved Document O. This guide provides clarity for practitioners and regulators so that assessments can be carried out consistently, and the outcome is repeatable and reliable.

Paragraph 3.3 of Approved Document O states that windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following internal limits:

- 40dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am)
- 55dB L_{AFmax}, more than 10 times a night (between 11pm and 7am)

The IOA guide also provides the following clarification of the range of external (free field) limiting noise levels (assuming 10dB of attenuation for partly open window and typical room conditions) that generally precludes the simplified method for over-heating calculations (ie above these values they recommend dynamic thermal modelling) based on Approved Document O:

Parameter	High Risk Location	Moderate Risk Location
$L_{Aeq, 8hr}$, averaged over 8hrs between 11pm and 7am	45dB	50dB
L_{AFmax}, more than 10 times a night between 11pm and 7am	60dB	65dB

Table 3 – Noise Limits above which IOA guide recommends dynamic thermal modelling for over-heating assessments

3.7 Acoustics Ventilation and Overheating Residential Design Guide 2020

The Acoustics, Ventilation and Overheating Guide (AVO) is intended to be used by acoustic practitioners as well as all those involved in the planning, development, design and commissioning of new dwellings.

It recommends an approach to acoustic assessments for new residential developments that take due regard of the interdependence of provisions for acoustics, ventilation and overheating. Application of the AVO Guide is intended to demonstrate good acoustic design as described in the ProPG, when considering internal noise level guidelines.

3.8 Recommended Noise Assessment Criteria

Based on the guidance above it is recommended that the following criteria would be reasonable with the aim of minimising the impact of the environmental noise on the proposed new residential accommodation:

- Daytime noise levels not to exceed 35dB $L_{Aeq,\ 16hr}$ in living rooms / bedrooms
- Daytime noise levels not to exceed 40dB $L_{Aeq,\ 16hr}$ in dining room / kitchen
- Night-time noise levels in bedrooms not to exceed 30dB $L_{Aeq,\ 8hr}$
- Night-time single sound events in bedrooms not to exceed 45dB L_{Amax} more than 15 times a night
- Noise levels in external amenity spaces to not exceed 50dB $L_{Aeq,T}$, with an upper guideline of 55dB $L_{Aeq,T}$ in noisier environments

Table 4, Note 5 of BS 8233:2014 states: 'If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level. If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.'

Given the location of the site the proposed development has been identified as a moderate risk location, as per IOA guidance on Approved Document O. As such Azymuth would recommend the following external noise level targets at the façade of the building (ADO target + 10dB for open window noise attenuation):

- 50dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am)
- 65dB L_{AFmax}, more than 10 times a night (between 11pm and 7am)

4.0 Assessment of Results

4.1 Assessment of Noise Risk

The following noise and overheating risk assessment highlights the level of risk of an adverse effect based on the guidance from the ProPG and AVO guidance documents.

On-site measured noise levels have been used in the assessment below.

Building Elevation	Time of Day	Free Field Noise Levels (dBA)	ProPG Risk of Adverse Effect	AVO Guide Risk (overheating) Category	A.D.O
Elevations Facing Rochdale Rd	Daytime $L_{Aeq, 16hr}$	68 (Calculated)	Medium	High	n/a
	Night-time $L_{Aeq, 8hr}$	63 (Calculated)	High	High	Window Closed
Elevations facing White Moss Rd	Daytime $L_{Aeq, 16hr}$	63 (Calculated)	Low	Medium	n/a
	Night-time $L_{Aeq, 8hr}$	57 (Calculated)	Medium	High	Window Closed
Elevations Facing Proposed Car Park	Daytime $L_{Aeq, 16hr}$	50 (Calculated)	Negligible	Negligible	n/a
	Night-time $L_{Aeq, 8hr}$	44 (Calculated)	Negligible/Low	Negligible	Windows Open

Table 4 – Noise risk assessment for White Moss Road

As shown above the site generally possesses a negligible to high risk of adverse noise affect (depending on the elevation) and overheating as per the ProPG and AVO guidance documents respectively.

The AVO guide gives the following example outcomes for noise that may be perceived as present and disruptive (for locations with a high risk assessment):

"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."

It should be noted that ProPG does not account for daytime L_{Amax} instances that may arise from vehicles passing by. These instances may cause annoyance during the day to the potential residents especially when the site is in close proximity to a Fire Station.

4.1.1 Approved Document O Assessment of Noise Levels

The measured and calculated worst-case night-time (L_{Aeq} and L_{Amax}) noise level indicate exceedances of the ADO noise limits across facades facing onto Rochdale Road and White Moss Road which is west and south of the proposed building respectively. Due to an elevated risk of overheating at night, extra ventilation would be required, replacing the need to open the windows at night.

Calculated worst-case night-time noise levels on the car park facing elevations of the building are compliant with the ProPG, AVO and ADO noise limits, thus open windows can be used here during both the daytime and night-time periods.

4.2 SoundPLAN Model

Azymuth has undertaken acoustic modelling with the SoundPLAN noise modelling software to predict and visualise the impact of noise on the proposed development site.

4.2.1 Grid Noise Map (GNM)

Azymuth have produced the following GNMs for the day and nighttime periods respectively.

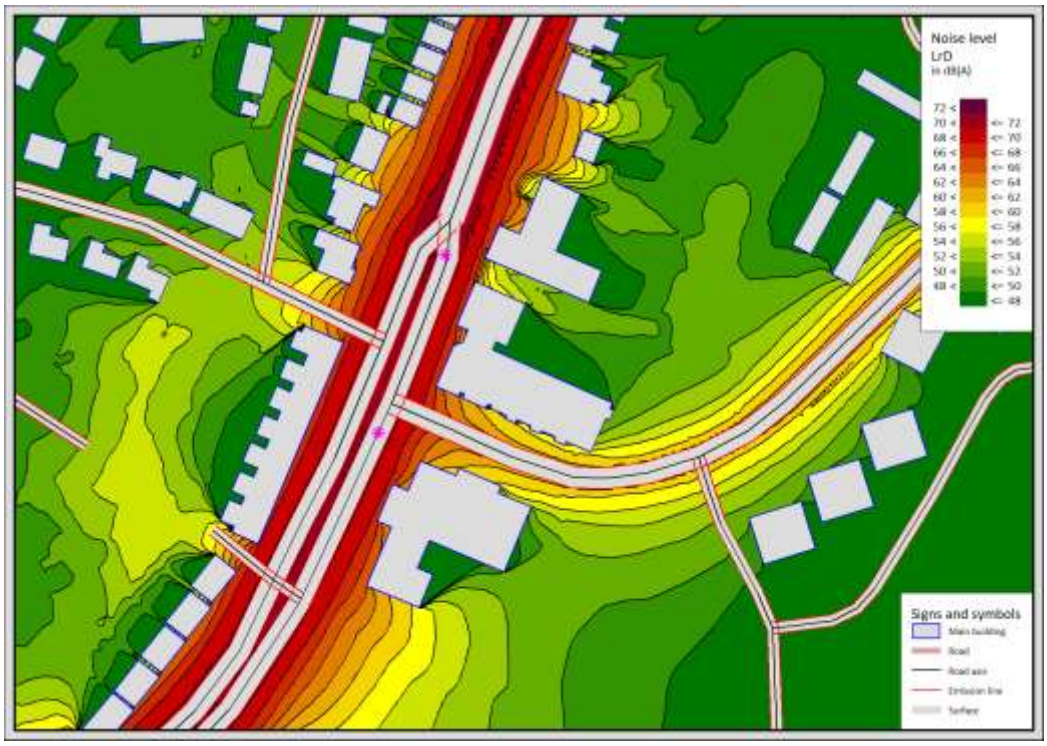


Figure 3 – Daytime GNM of White Moss Road, Manchester



Figure 4 – Night-time GNM of White Moss Road, Manchester

4.2.2 Façade Noise Map (FNM)

Azymuth have produced the following FNM,

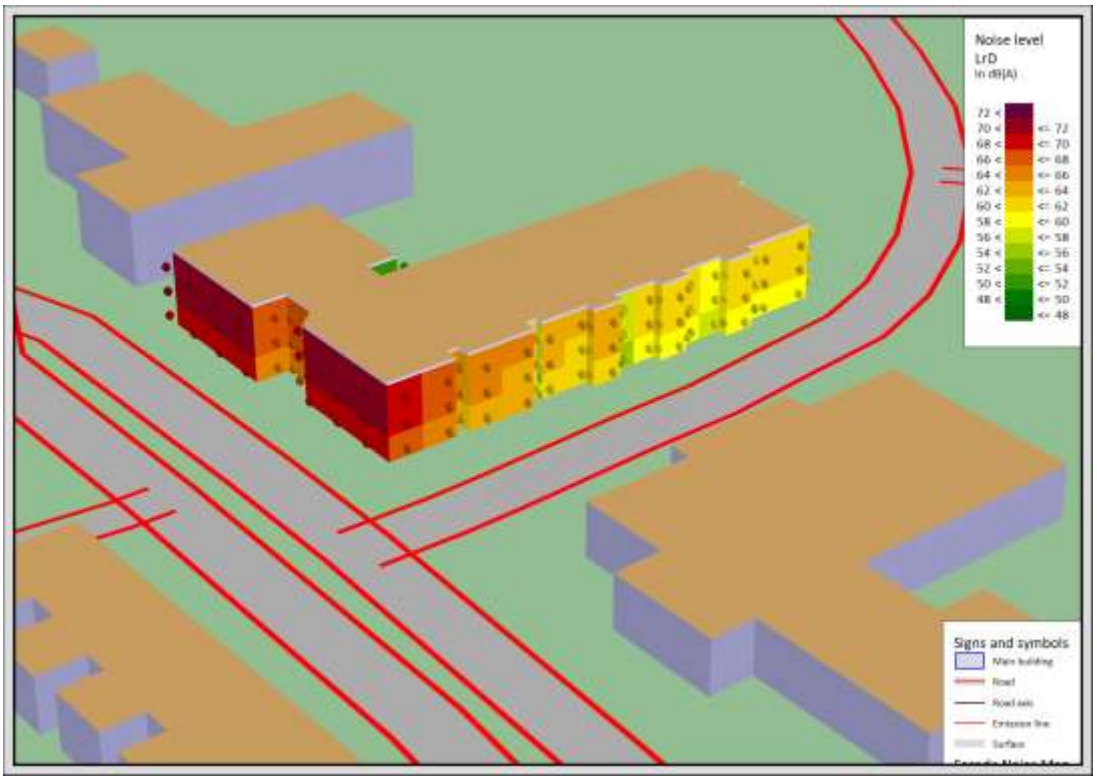


Figure 5 – Daytime FNM of White Moss Road, Manchester

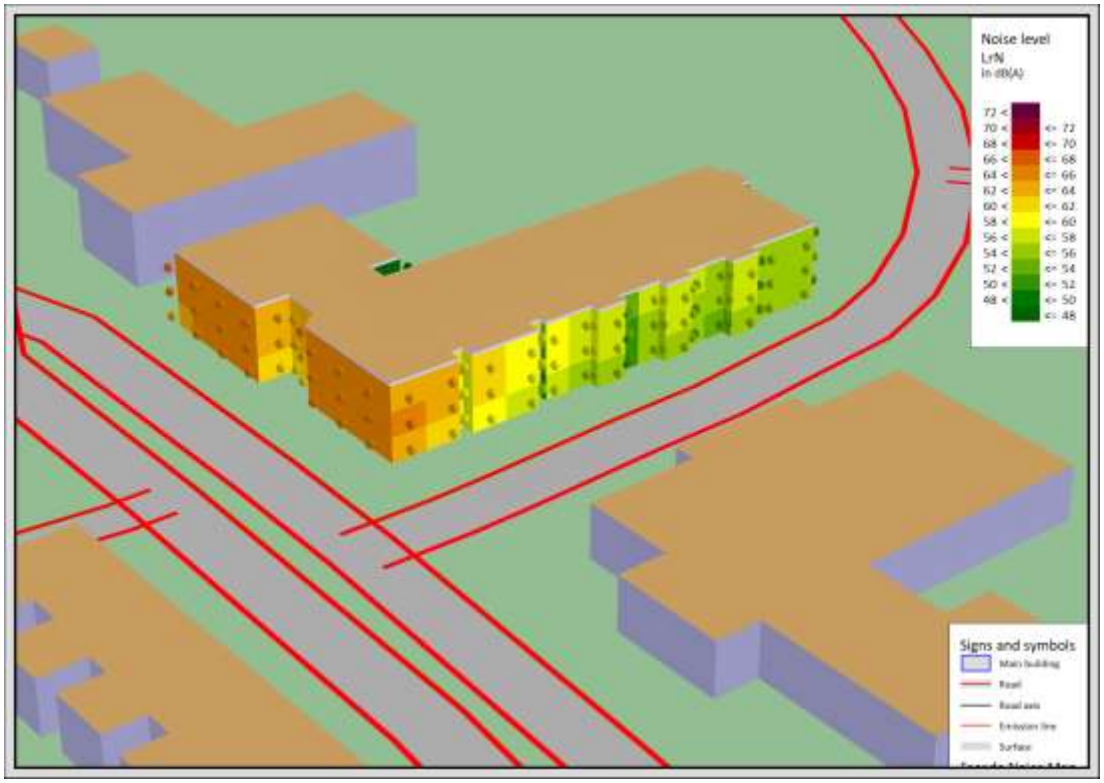


Figure 6 – Night-time FNM of White Moss Road, Manchester

5.0 Recommendations for Noise Mitigation

Based on survey data and the predicted noise levels derived from SoundPLAN, Azymuth have produced the following recommendations in order to mitigate the effects of noise within the proposed development. If these recommendations are followed, noise levels within the development will satisfy the criteria as set out in Section 3.8.

NB all recommended mitigation specifications are subject to good workmanship and for materials to be installed as the manufacturer intends. Any poor workmanship may lead to weaknesses in the sound attenuation provided by the building elements.

Mitigation specifications have been colour coded relating to Section 5.3.

Azymuth would recommend that a detailed BS 8233 break-in calculation is undertaken when the building envelope construction has been finalised in order to confirm that internal ambient noise level targets will be achieved.

5.1 Recommended Glazing Specification

The table below outlines the glazing specifications Azymuth would recommend in order to achieve the specified internal ambient noise level targets.

Location (Habitable Spaces)	Glazing Specification	Appropriate Glazing Types
Flats Facing the Proposed Parking Lot	Any building regulations approved min. 29dB R_W and 25dB R_W+C_{tr}	Standard glazing types e.g 4/12/4mm good quality double glazed units
Flats Facing White Moss Road & Rochdale Road	Any building regulations approved min. 40dB R_W and 35dB R_W+C_{tr}	Acoustic glazing types e.g 6/16/8.8mm Pilkington Optiphon double glazed units

Table 5 – Azymuth recommended glazing specification for White Moss Road

5.2 Recommended Ventilation Specification

Table 5 outlines the recommended ventilation that should be paired with the glazing specifications to ensure the appropriate sound insulation targets are met. With reference to the AVO and ProPG guidance, Azymuth recommends the following ventilation specification to ensure sufficient air flow to dwellings whilst also achieving internal noise level targets.

Location (Habitable Spaces)	Minimum Ventilation Specification to meet ADO noise criteria	Window Ventilation
Apartments facing the proposed parking lot (**GREEN**)	Any Building Regulations approved ventilation strategy including MEV. If/where trickle vents are required these should be rated at D_{new} 32dB	Windows can be opened day or night depending on occupant preferences.
Apartments facing Rochdale Road (**ORANGE**)	Building Regulations Part F Mechanical Ventilation with Heat Recovery	Windows closed most of the day with some periods where occupants would choose to open windows as per AVO guidance (High risk day and night) Windows closed at night to meet ADO
Apartments facing White Moss Road (**ORANGE**)	Building Regulations Part F Mechanical Ventilation with Heat Recovery	Windows closed at night to meet ADO

Table 6 – Azymuth recommended ventilation specification for White Moss Road

5.3 Mitigation Specifications

The figure below shows the locations in which the specified mitigation measures should be implemented.

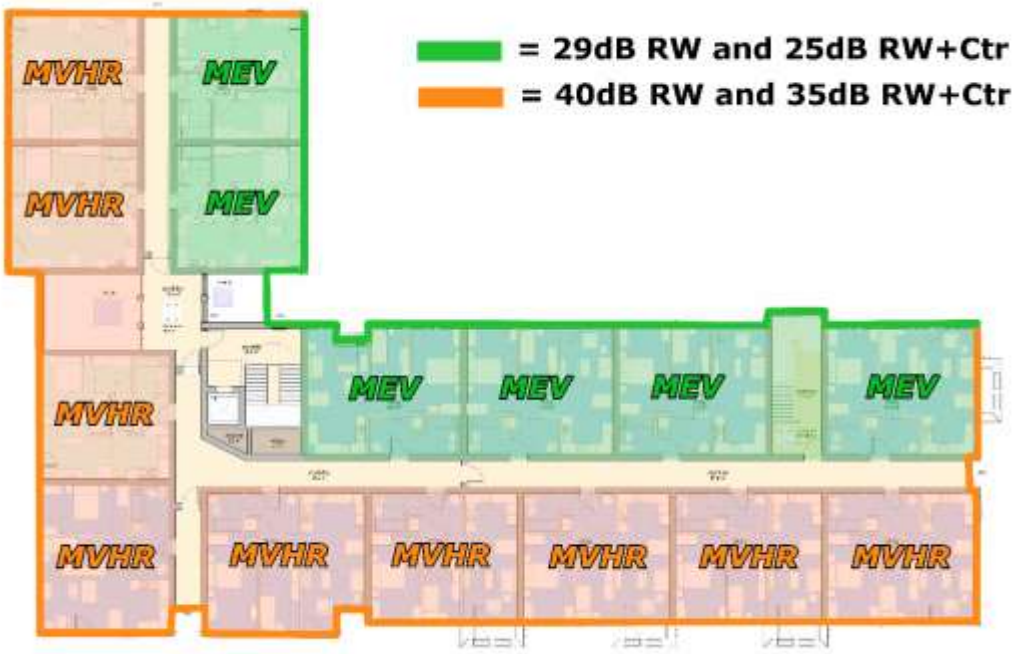


Figure 7 – Mitigation specifications for White Moss Road proposed building. This specification applies to dwellings facing the same elevations on all floors.

5.4 Other Elements of Building Envelope

Other elements of the building envelope should have the following sound insulation performance:

- Roof: minimum sound insulation 48dB R_W. This minimum would likely be exceeded with a suitably insulated concrete roof flat roof. (NB for composite flat roof with no concrete then build-ups a minimum 200mm roof void and 100m mineral wool insulation would be recommended over and above the rigid insulation required to provide the required levels of thermal insulation).
- External Walls: minimum sound insulation 55dB R_W. This minimum is likely to be significantly exceeded by a normal brickwork façade. Where alternative external wall types (eg composite cladding panels / Metsec build-ups) are proposed on habitable areas it will be appropriate to check whether they comply with the target 55dB R_W.

5.5 M&E Equipment Noise Limits

There is an integral plant room on the ground floor of the building located facing Rochdale Road, thus, Azymuth recommends that:

- internal noise levels within in plant rooms should not exceed 70 dBA,
- the noise levels transmitted to the adjoining apartment should not exceed 25dBA as measured at any location inside the apartment,
- the door to the plantroom opens onto the ground circulation and as such the door should be rated at Rw 35dB or better,
- noise levels emitted to the ground floor circulation should not exceed 45dBA at 1m from the plant room door,
- noise levels emitted externally (from external doors or atmosphere connections) should not exceed 55 dBA at 1 meter from the plant rooms.

Based on the current energy strategy proposals we are not anticipating any external plant/M&E equipment on the façade or roof of this building. If external plant were introduced, it may alter the noise recommendations.

6.0 Summary

Azymuth has undertaken a Noise Impact Assessment (NIA) at a proposed development of White Moss Road, Blackley, Manchester.

The main source of noise affecting the site is traffic noise coming from Rochdale Road and White Moss Road alongside the intermittent sound of Fire Engines from the Blackley Community Fire Station which would affect the L_{Amax}.

Daytime ambient noise levels surrounding the site have been measured to be between ~55.9-67.3dB $L_{Aeq,16hr}$. Night-time ambient noise levels have been measured to be ~51.5-62.1dB $L_{Aeq,8hr}$.

The 10th highest L_{Amax} for the elevations facing Rochdale Road and White Moss Road are likely to exceed 65dB as the location is in close proximity to a Fire Station while the elevations facing the proposed parking lot would likely be below 65dB.

The façades of the proposed building facing Rochdale Road and White Moss Road on average possesses a medium-high risk of adverse noise affect and overheating as per the ProPG and AVO guidance documents whereas facades facing the proposed parking lot possess a low to negligible risk.

Azymuth have produced a noise model in SoundPLAN 9.1 to better predict and visualise the effect of noise across the site. Calculated worst-case night-time noise levels indicate non-compliance with the ADO night-time noise limits meaning that windows cannot be opened as a viable ventilation strategy at a night for all elevations except for ones facing the proposed parking lot.

Azymuth have produced the following recommendations with a means of achieving the internal ambient noise level targets contained within Section 3.8 of this report.

Glazing

- Car park facing elevation : min. 29dB R_w and 25dB $R_w + C_{tr}$
- Elevations facing White Moss Road & Rochdale Road: min. 40dB R_w and 35dB $R_w + C_{tr}$

If the above recommendations are to be adhered to then the internal noise levels shall satisfy the assessment criteria contained within Section 3.8.

Ventilation

- Apartments facing the proposed parking lot: minimum ventilation to be building regs ADF compatible MEV type (or better) and windows can be open in day time or night depending on occupant preferences.
- Elevations facing White Moss Road & Rochdale Road: minimum ventilation MVHR system. Window (assumed) fully closed at night in accordance with Approved Document O. : Rochdale Road - Windows closed most of the day with some periods where occupants would choose to open windows as per AVO guidance (High risk day and night.

If the above recommendations are to be adhered to, the internal noise levels shall satisfy the assessment criteria contained within Section 3.8 and highlighted in Section 5.3. figure 7.

This report considers acoustic requirements only and does not assess ADL (energy) or ADO (overheating) criteria. For ADO compliance, ground floor windows must be assumed closed for security reasons, which is likely to require MVHR in these flats, regardless of the noise assessment results. All flats will be assessed against ADL and ADO criteria to determine the appropriate ventilation strategy. The ADL and ADO outcomes may override the noise assessment, with the overall window open/closed strategy applied accordingly.

Appendix A – Glossary of Acoustic Terms

Decibel (dB)
This is the unit used to measure sound. The human ear has an approximately logarithmic response to acoustic pressure over a very large dynamic range (typically 20 micro Pascal to 100 Pascal).

dB (A)
This is a measure of the overall noise level of sound across the audible spectrum with a frequency weighting (i.e. A-weighting) to compensate for the sensitivity of the human ear to sound of different frequencies. The A-weighting curve is implemented in sound level meters using an electronic filter that approximately corresponds to the frequency response of the ear.

Octave Band Noise Level
The human ear is sensitive to sound over a range of frequencies between approximately 20Hz to 20kHz. The ear is also generally more sensitive to medium and high frequencies than to low frequencies. In order to define the frequency content of a noise, the spectrum can be divided into frequency bands. The most commonly used frequency bands are octave bands, in which the mid-frequency of each band is twice that of the band below it.

L_{Aeq}
This is the equivalent steady sound level in dB(A) containing the same acoustic energy as the actual fluctuating sound level over a given time period.

Reverberation Time (RT or sometimes T_{30} or T_{60})
This is the time taken for the reverberant sound energy in an enclosure to decay one millionth of its equilibrium value, i.e. by 60dB, after the source has been switched off. The reverberation time is frequency dependent, and it is customary to measure its value in octave or one-third octave bands. Reverberation occurs when sound waves are repeatedly reflected from each surface of the room.

Sound Reduction Index (SRI)
Difference measured between the amount of energy flowing towards the wall in the source room and the total amount of energy entering the receiving room (usual range 100 - 3150Hz for one third octave band values). The SRI varies with frequency and is measured in a laboratory in either octave or one-third octave bands.

SRI = L1 - L2 + 10 log (S/A), where:
L1 = Noise level in the source room
L2 = Noise levels in the receiving room
S = Surface area of test specimen
A = Equivalent acoustic absorption area in the receiving room

Weighted Sound Reduction Index (R_w)
This is a weighted single figure descriptor of the sound insulation performance of a partition measured under laboratory conditions. The procedure used to quantify the R_w is to compare the sound reduction index (SRI) in each of the one-third octave bands from 100Hz to 3150Hz against a set of standard reference curves.

Appendix B – Noise Survey Data

Start	Position	Time	L_{Amax}	L_{Aeq}	L_{A10}	L_{A50}	L_{A90}
22nd May 2026							
10:59	1	00:05:00	77.9	66.1	68.8	65.4	60.4
11:04	1	00:05:00	73.8	66.1	69.2	64.7	59.3
11:09	1	00:05:00	87.8	69.7	69.6	66.6	61.4
11:14	1	00:05:00	74.9	66.9	69.7	66	60.6
11:23	1	00:05:00	73.2	66.8	69.2	66.3	62.3
11:28	1	00:05:00	73.9	67.2	69.8	66.4	62.3
11:33	1	00:05:00	75	67.1	69.9	66.2	61.1
11:38	1	00:05:00	75.9	66	68.7	64.8	58.7
11:46	2	00:05:00	73.6	58.5	60.1	56	52
11:51	2	00:05:00	66	57.6	60	56.7	53.4
11:56	2	00:05:00	64.4	56.5	58.9	55.7	52.6
12:01	2	00:05:00	71.2	59.3	63.2	55.8	51.3
12:10	3	00:05:00	66.3	56.1	58.2	55.1	52.8
12:15	3	00:05:00	66.7	56.3	58.7	55.6	52.6
12:20	3	00:05:00	65	54.3	56.2	53.8	50.7
12:25	3	00:05:00	65	56.1	58.5	55.3	52.5
12:55	1	00:05:00	79.4	65.6	68.1	64	61.4
13:00	1	00:05:00	94.7	73	67.6	63.6	59.2
13:05	1	00:05:00	68.9	64.1	66.4	63.5	60.8
13:10	1	00:05:00	76.2	64.2	66.1	63.7	60.5
13:17	2	00:05:00	66.6	57.2	59.6	56.3	53.4
13:22	2	00:05:00	65.4	56.8	59.1	56	53.1
13:27	2	00:05:00	70.7	60.2	63.6	58.1	54.1
13:32	2	00:05:00	76	58.9	60.3	56.9	52.3
13:39	3	00:05:00	76.4	57.2	57.9	54	51.9
13:44	3	00:05:00	61.8	55.2	56.7	54.9	53.1
13:49	3	00:05:00	65.6	55.2	57.1	54.6	52.6
13:54	3	00:05:00	71.7	56	58.2	55.1	51.8
14:01	1	00:05:00	91.5	68.8	67.8	64.2	61.3
14:06	1	00:05:00	73.3	65.4	67.7	64.5	61.8
14:11	1	00:05:00	76.5	64.3	66.3	63.3	60.5
14:16	1	00:05:00	77.7	64.3	66.8	63.7	58.9
14:23	2	00:05:00	65.9	57.2	59.7	56.4	53
14:28	2	00:05:00	67.4	57.5	59.8	56.5	52.9
14:33	2	00:05:00	66.2	57.9	60.4	56.9	53.8
14:38	2	00:05:00	86.7	64.4	60.6	56.3	53.4
4^{th}-5^{th} June 2026							
23:25	1	00:05:00	69.8	61.6	65.3	60.1	48.9
23:30	1	00:05:00	84.7	66.7	66.3	60.9	53.2
23:35	1	00:05:00	69.7	61.1	65.1	58.1	47.8
23:40	1	00:05:00	68.2	61	65.5	58.1	46.5
23:51	2	00:05:00	61.9	53.2	56.8	51.9	42
23:56	2	00:05:00	63.7	55.5	58.8	53.9	48.1
00:01	2	00:05:00	64.5	54	57.6	51.2	42.5
00:06	2	00:05:00	61.8	51.8	55.6	49	42.4

Start	Position	Time	L_{Amax}	L_{Aeq}	L_{A10}	L_{A50}	L_{A90}
00:13	3	00:05:00	62.6	52.7	55.9	51.2	44.2
00:18	3	00:05:00	57.1	50.9	54.3	49.7	43
00:23	3	00:05:00	58.6	50.8	54.8	48.4	41.4
00:28	3	00:05:00	64.8	52.8	56.3	49.4	43.3
00:36	1	00:05:00	68.6	57.5	62.2	51.6	41.3
00:41	1	00:05:00	67.6	58.2	62	55.2	46.7
00:46	1	00:05:00	67.1	57.8	62.1	54.6	45.9
00:51	1	00:05:00	87	63.9	61.8	51.9	41.9
00:58	1	00:05:00	73.4	53.5	56.7	49.1	40.6
01:03	2	00:05:00	62.1	50.9	55.2	46.9	39.4
01:08	2	00:05:00	71.3	54.5	57.6	49.9	42.1
01:13	2	00:05:00	74.7	52.9	55.4	47.4	41
01:21	3	00:05:00	59.8	51.5	54.9	49.6	43.8
01:26	3	00:05:00	58.2	49.4	52.9	47.4	44
01:31	3	00:05:00	68.1	52.4	54.4	45.6	41.5
01:36	3	00:05:00	65	50.8	53.6	47.1	42.5

Table B1 – Fully tabulated noise measurement results