



Azymuth Acoustics UK

Professional Acoustic Services

Noise Impact Assessment

Ref: AA0509

78-80 Church Street West

Radcliffe,
Manchester,
M26 2SL

On behalf of

Sourced Network Ltd



Azymuth Acoustics UK
Viridor House
No.3 Bolholt Terrace
Bury/Gtr Manchester
BL8 1PP

Tel: +44 (0)161-762 1055
Fax: +44 (0)161-761 1094
Matthew@acousticsuk.com
www.acousticsuk.com



Document Status – Draft

Ref: AA0509	Signature:	Name:	Date:
Produced by:		Ollie Platts BSc (Hons), PgDip, AMIOA	6/12/23
Checked by:		Dominic McCann, BEng (Hons), MIOA, Director	18/12/2023
Approved by:		Matthew Gibson, BEng (Hons), CEng, CEnv, Director	18/12/2023

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1.0 Introduction

Azymuth Acoustics UK (henceforth Azymuth) has been contracted by Sourced Network Ltd to perform a Noise Impact Assessment (NIA) in relation to the conversion of a building into HMO apartments located on 78-80 Church Street West, Radcliffe .

Bury Council have provided the following request for additional information in support of the planning application: *“Please submit an acoustic survey that takes account of the industrial unit to the rear of the site and details any mitigation that may be required for the rooms within the proposed development”*

This request relates to FineFit Glass Specialists premises to the rear of the proposed development. Finefit Glass specialise in the design and manufacture of glass. FineFit expect a few vehicle visits per day in the form of deliveries and visitors, no particular high noise levels are produced on site.

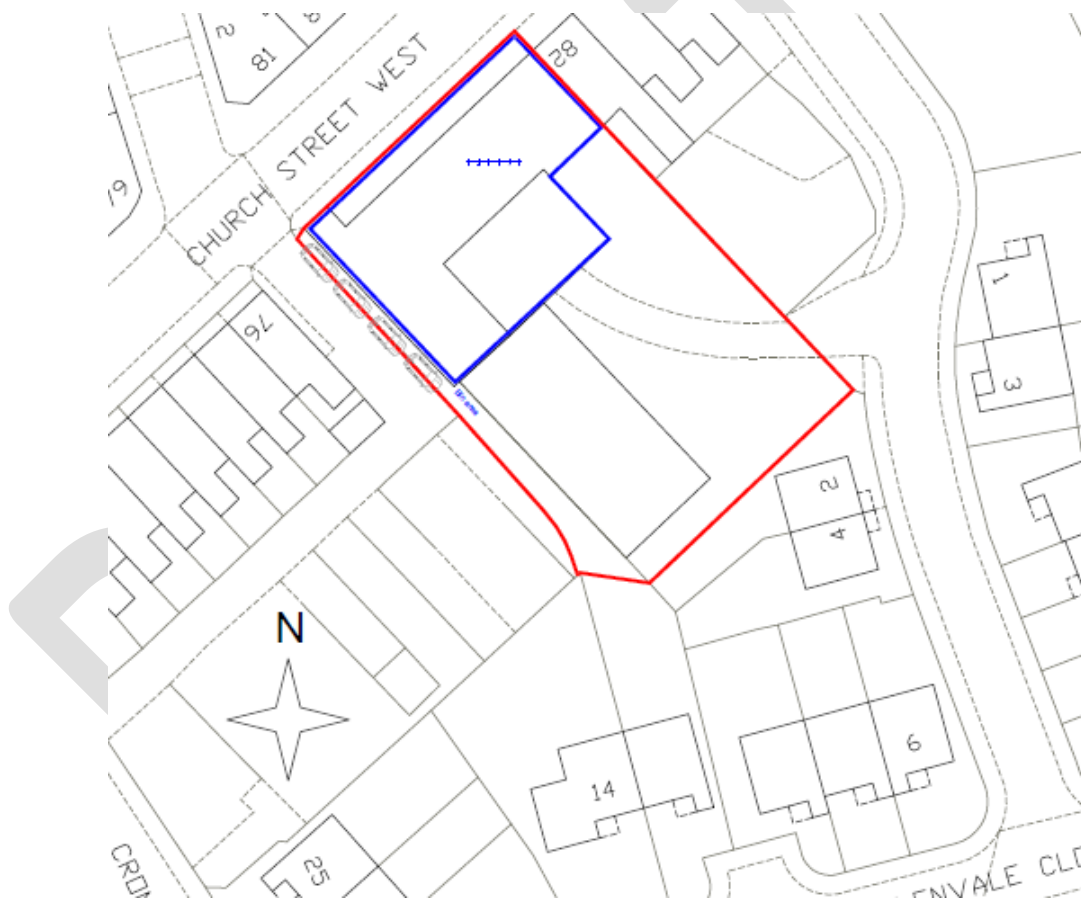


Figure 1 – Site plan of proposed development

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 Church Street West.
- 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

2.0 Baseline Noise Survey

2.1 Measurement Procedures

Both a manned survey along the front elevation of the development and an unmanned survey to the rear of the development have been undertaken. The purpose of the manned survey was to measure traffic noise levels, the purpose of the unmanned survey was to measure typical industrial noise emitting from FineFit over a typical working day, the unmanned survey was undertaken for ~24 hours.

The instrumentation used for the manned survey consisted of a SvanTek 971 type 1 precision sound level meter, for the unmanned survey a SvanTek 977 type 1 precision sound level meter was used. 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.

Manned daytime noise level measurements were undertaken between 11:56hrs and 12:56hrs on the 23rd November 2023. Manned night-time measurements were undertaken between 23:00hrs and 23:30hrs on the 6th December 2023.

The unmanned survey at the rear of the development was undertaken between 13:00hrs on the 6th December and 12:00hrs on the 7th December 2023.

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

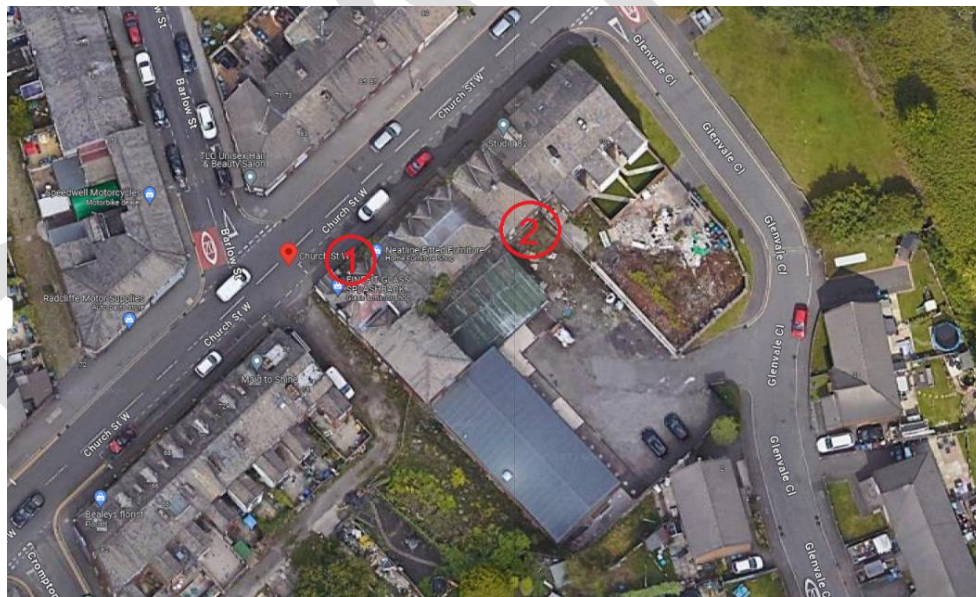


Figure 2 – Noise measurement position(s)

- Position 1: Front of Church Street West (~3m from roadside)
- Position 2: Rear of Church Street West (24 hour survey, ~1m outside 1st floor window)



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}
1) Church Street West (Front)	Day	83.9	71.0	74.3	68.5	60.3
1) Church Street West (Front)	Night	80.1	65.9	70.5	56.2	44.3
2) Church Street West (Rear)	Day	66.4	50.5	51.4	48.9	47.3
2) Church Street West (Rear)	Night	60.6	46.5	46.9	44.9	43.4

Table 1 – Summary of noise measurements

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

2.2.2 Assessment of Night-time L_{Amax} Data

Azymuth has carried out an assessment of the available night-time L_{Amax} noise level data for Church Street West (referenced to ~3m from the roadside). The highest measured L_{Amax} value along Church Street West was 81.6dB and the duration of the night-time survey at this position was exactly 30 minutes hence it is estimated that the 10th highest L_{Amax} value over the entire 8hr night-time period is likely to be around 83-85dB.

2.3 Description of Noise Climate

The noise climate surrounding the site is mostly dominated by road traffic noise from Church Street West. The site is also in close proximity to the Manchester Metrolink network and as such noise from trams is likely to affect the site during daytime hours.

During the surveys undertaken by Azymuth the weather was mostly dry with wind speeds below 5mph.

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 (NPPF 2023)
- British Standard 8233:2014
- World Health Organisation Guidelines on Community Noise
- British Standard 4142:2014+A1:2019
- IOA Guide to Noise Requirements of Approved Document O 2022
- 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) 2023

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

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 2022

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.

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 10 times a night

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.’



4.0 Assessment of Results

4.1 Assessment of Noise Risk

The following noise risk assessment highlights the level of risk of an adverse noise effect based on the guidance from the ProPG document.

Location	Time of Day	Measured Noise Levels (dBA)	ProPG Risk of Adverse Effect	AVO Guide Risk (overheating) Category
Front Elevation of Church St West	Daytime $L_{Aeq, 16hr}$	71	High	High
	Night-time $L_{Aeq, 8hr}$	66	High	High
Rear Elevation of Church St West	Daytime $L_{Aeq, 16hr}$	51	Negligible/Low	Negligible
	Night-time $L_{Aeq, 8hr}$	47	Low	Negligible

Table 3 – Noise risk assessment for Church Street West

As shown above, the façades facing directly onto Church Street West would represent the most significant risk in terms of potential adverse impact. These elevations would possess an elevated risk of overheating requiring enhanced ventilation that would normally be offered by opening windows, however, the noise risk assessment indicates that relying on opening windows would result in significant noise intrusion, thus disrupting normal sleep. The AVO guide specifically states that:

“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. As such, extra mitigation has been recommended in order to minimise noise complaints to the premises.

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 Church Street West Site.

Azymuth have derived the noise contribution from FineFit by comparing the data measured during their typical working hours with data measured outside of typical working hours. Information provided by FineFit describing typical daily operations/deliveries has also been used to inform any industrial noise contribution.

The access road to FineFit has been modelled to represent typical daily deliveries, area sources have been used in the SoundPLAN 8.2 model to represent any internal industrial noise that may omit from the premises itself.

4.2.1 Grid Noise Map (GNM)

The following GNM includes traffic noise from Church Street West as well as industrial noise from FineFit.

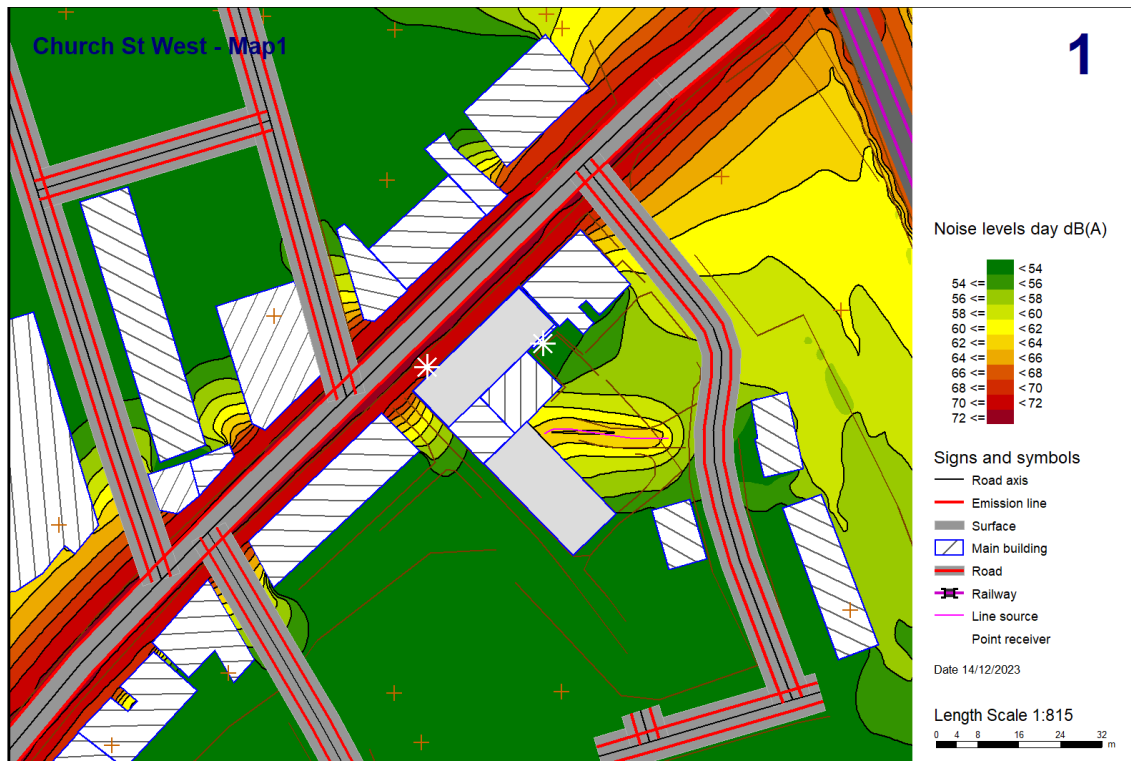


Figure 3 – Daytime GNM of both traffic and industrial noise, Church Street West

4.2.2 Façade Noise Map (FNM)

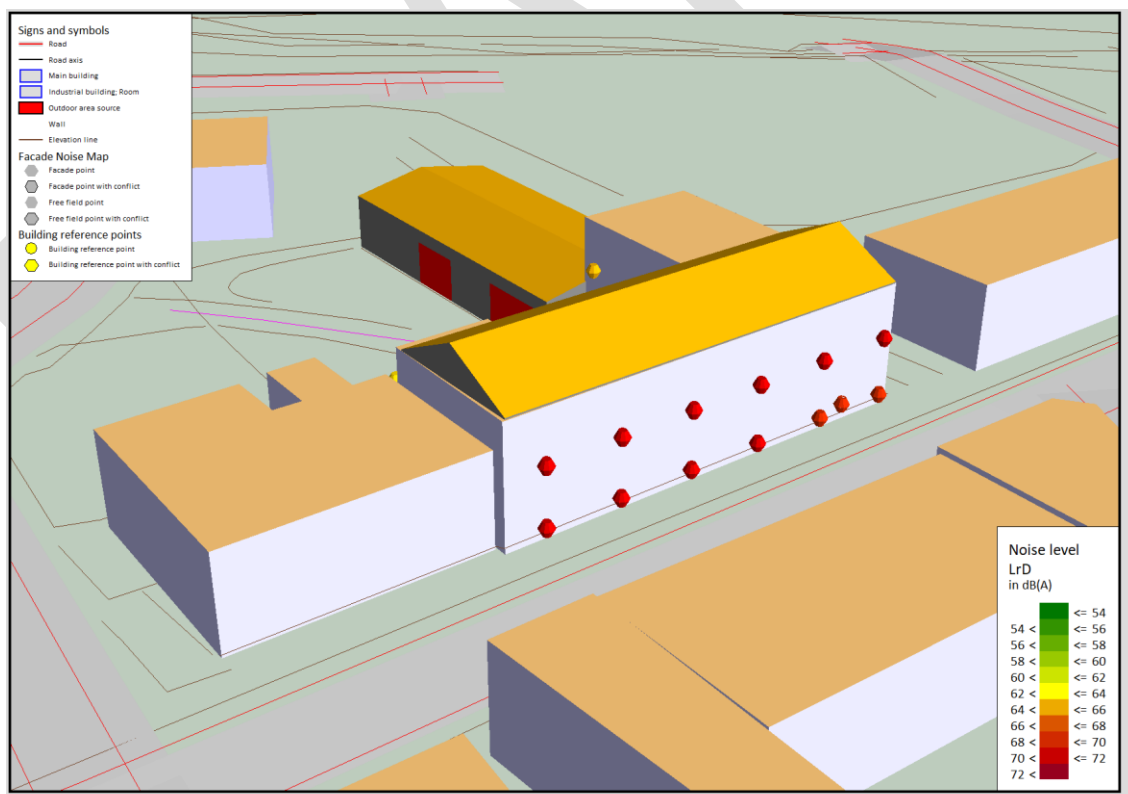


Figure 4 – Daytime FNM of both traffic and industrial noise, Church Street West (front)

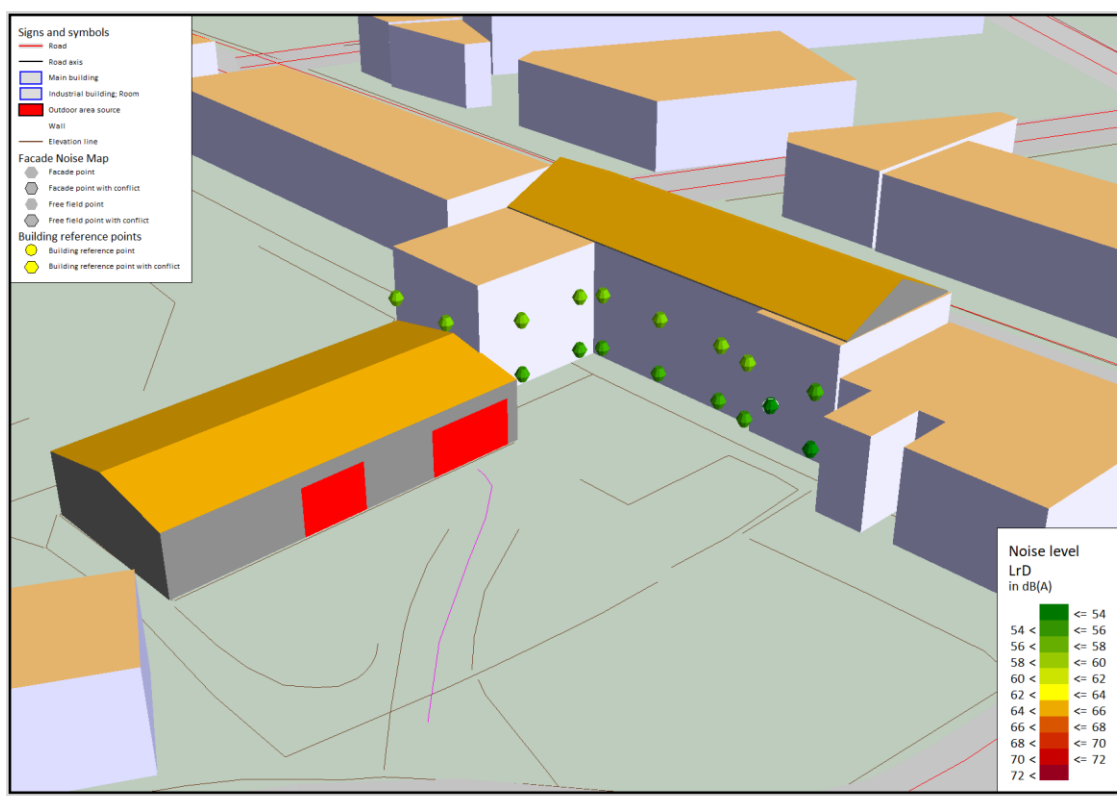


Figure 5 – Daytime FNM of both traffic and industrial noise, Church Street West (rear)

4.3 Assessment of Noise from FineFit Glass Specialists

The sound level at the rear of the site was measured to be ~51dBA during a typical FineFit working day lasting from 09:00hrs to 16:30hrs.

The below table assesses the noise generated by the industrial premises on the rear elevation of the proposed development and compares this noise level to the measured background sound level.

A penalty of 3dB has been applied to account for and impulsive or intermittent acoustic characteristics generated by the industrial premises.

Receiver	Distance from Source to Receiver (~m)	Noise Level at Receptor (dBA)	Background Sound Level at Receptor, L ₉₀ (dBA)	Penalty for Tonality, Impulsivity and/or Intermittency (dBA)	Noise Rating Level (dBA)	Rating Level re. Background Sound Level
Rear elevation of Church Street West	10	46.5	46.0	+3	49.5	+3.5

Table 4 – Octave band noise levels at rear of Church Street West

Azymuth have recommended additional mitigation in Section 5.0 to mitigate the effects of industrial noise on the internal areas of the development.



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.

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.

Mitigation specifications have been colour coded as relates to Figure 6.

Location (Habitable Spaces)	Glazing Specification	Appropriate Glazing Types
Church Street West elevation (Orange)	Any building regulations approved min. 40dB R_w and 37 R_w+C_{tr}	Acoustic glazing e.g 6mm/16mm argon/6.8mm Pilkington Optiphon™
All other elevations (Green)	Any building regulations approved min. 29dB R_w and 25dB R_w+C_{tr}	Acoustic glazing e.g 4mm/16mm/4mm good quality double glazed units

Table 5 – Azymuth recommended glazing specification for Church Street West

5.2 Recommended Ventilation Specification

Table 6 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)	Ventilation Specification	Appropriate Ventilation Types
Elevations facing onto Church Street West (Orange)	System 3 or 4	Enhanced mechanical ventilation with a boost/purge function. If system 3 and trickle vents are necessary, min. 40dB D_{new}
Rear elevations of development (Green)	System 3 MEV	Trickle vents, min. 32dB D_{new}

Table 6 – Azymuth recommended ventilation specification for Church Street West

5.3 Mitigation Specifications

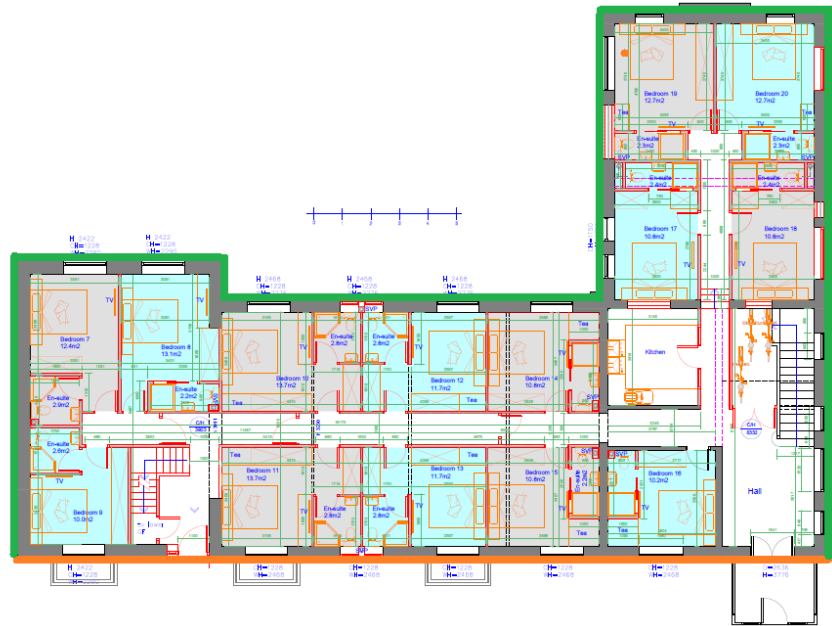


Figure 6 – Mitigation specifications for Church Street West

5.4 Other Elements of Building Envelope

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

- External Walls: minimum sound insulation 58dB 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 58dB R_w .
- Roof: minimum sound insulation 45dB R_w . This minimum would likely be exceeded with a traditional slate or tile roof with mineral wool loft insulation above plasterboard ceilings or by a suitably insulated concrete roof or composite flat roof. (NB for composite flat roof 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).

6.0 Summary

Azymuth has undertaken a Noise Impact Assessment (NIA) in relation to the conversion of a vacant building into HMO apartments located on 78-80 Church Street West, Radcliffe.

A manned survey was undertaken at the front of the development. Ambient noise levels were measured to be 71dB $L_{Aeq,16hr}$ during the daytime and ~66dB $L_{Aeq,8hr}$ during the night-time.

An unmanned survey was undertaken to the rear of the development over a continuous period of ~24 hours to measure industrial noise from FineFit Glass Specialists. The daytime ambient noise level during FineFit's typical working hours (09:00hrs to 16:30hrs) was measured to be ~51dB $L_{Aeq,16hr}$.

The front elevation of the development possesses a high risk of adverse noise effect and overheating, the rear elevation possesses a negligible to low risk of adverse noise effect and overheating as per the ProPG and AVO guidance documents.

Azymuth have produced a noise model in SoundPLAN 8.2 to predict and visualise the effect of noise, both traffic and industrial, on the development.

After an assessment of FineFit it was found that the industrial noise level exceeds the background sound level by 3.5dB at the rear façade of the proposed development. As such Azymuth have recommended the following mitigation measures in order to mitigate the effects of external noise to the internal areas of the development.

Glazing

- Church Street West elevation: min. 40dB R_w and 37 R_w+C_{tr}
- All other elevations: min. 29dB R_w and 25 R_w+C_{tr}

Ventilation

- Church Street West elevation: System 3 MEV or System 4 MVHR
- Rear elevations: System 3 MEV

Other Elements of Building Envelope

- External walls: min. 58dB R_w
- Roof: min. 45dB R_w

If these recommendations are to be adhered to then the internal ambient noise levels shall satisfy the assessment criteria as set out in Section 3.8.



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.

$SRI = L_1 - L_2 + 10 \log (S/A)$, where:

L_1 = Noise level in the source room

L_2 = 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}
23 rd November 2023							
11:56	1	05:00	81.2	69.3	73.2	67.2	56
12:01	1	05:00	84.2	70.4	73.8	69	60.4
12:06	1	05:00	80.4	71.5	74	70.8	65.6
12:11	1	05:00	79	71.1	74.1	69.7	63.4
12:16	1	05:00	90.3	70.1	73	68.1	61
12:26	1	05:00	85.4	70.7	74.1	68.3	62.5
12:31	1	05:00	82	71	75.2	66.2	56.4
12:36	1	05:00	84.3	70.6	74.7	67.5	57.3
12:41	1	05:00	83.8	71.4	74.8	68.8	60.1
12:46	1	05:00	88	72.9	76.5	69.8	60.5
22:59	1	05:00	81.6	66	70.6	55.7	45.3
23:04	1	05:00	79.8	66.1	71	55.3	43.3
23:09	1	05:00	79.5	65.2	70	56.4	43
23:14	1	05:00	80.9	67.8	72.9	58.5	48.3
23:19	1	05:00	79.8	65.5	70.1	57.4	43.2
23:24	1	05:00	79	63.8	68.6	54	42.8
6 th December 2023							
13:30	2	30:00	61.8	50.8	53.4	50.5	45.4
14:00	2	30:00	67.7	51.5	54	50.1	46.1
14:30	2	30:00	68.6	49.6	51.6	48.2	46.2
15:00	2	30:00	66.7	50	51.1	48.8	47.2
15:30	2	30:00	63.1	49.5	50.7	48.6	46.9
16:00	2	30:00	65.8	49.6	50.7	48.7	47.2
16:30	2	30:00	66.1	49.1	50.1	48.3	46.7
17:00	2	30:00	71.4	50	51.3	48.2	46.5
17:30	2	30:00	66.9	49.9	51.4	48.8	47.1
18:00	2	30:00	66.7	50.5	51.7	49.2	47.7
18:30	2	30:00	60.8	49.3	50.3	48.6	47.2
19:00	2	30:00	62.5	49.5	50.7	48.8	47.4
19:30	2	30:00	67	49.3	50.2	48.5	47.2
20:00	2	30:00	61.5	48.3	49.6	47.7	46.2
20:30	2	30:00	64.6	48.2	49.2	47	45.3
21:00	2	30:00	60.4	46.9	48.2	46.1	44.7
21:30	2	30:00	59.2	47	48.4	46.3	45
22:00	2	30:00	60.5	47.3	48.6	46.7	45.3
22:30	2	30:00	61.1	47.7	48.9	47.2	46
23:00	2	30:00	61.2	48	48.9	47.5	46.3
23:30	2	30:00	59.5	47.9	49.1	47.4	46.1
7 th December 2023							
00:00	2	30:00	57.4	46.2	47.3	45.8	44.2
00:30	2	30:00	60	44.8	45.9	44	42.7
01:00	2	30:00	58.6	44.2	45.7	43.9	42.2
01:30	2	30:00	54.5	43.1	44.5	42.7	41.3
02:00	2	30:00	55.1	42.6	43.8	42.2	41
02:30	2	30:00	60.7	42.5	43.8	41.8	40.3



Start	Position	Time	L _{Amax}	L _{Aeq}	L _{A10}	L _{A50}	L _{A90}
03:00	2	30:00	57.9	44.1	46.3	43.1	41.3
03:30	2	30:00	64.5	44.2	45.4	43.6	42.2
04:00	2	30:00	59.8	43.4	44.7	42.9	41.3
04:30	2	30:00	61	43.6	44.9	43.1	41.7
05:00	2	30:00	60.9	44.2	45.5	43.9	42.4
05:30	2	30:00	62.9	47.3	48.9	46.6	44.2
06:00	2	30:00	65.9	51.5	53.5	50.5	49
06:30	2	30:00	70.2	50.8	52.8	49.7	48.1
07:00	2	30:00	63.1	51	53.6	49.8	48.3
07:30	2	30:00	69.1	51.7	53.8	50.3	48.4
08:00	2	30:00	73	52.9	52.7	50.2	48.8
08:30	2	30:00	71.7	50.9	51.8	50.1	48.8
09:00	2	30:00	79.4	53.9	53.8	50.6	49.2
09:30	2	30:00	70.4	53.4	55.7	50.6	49.3
10:00	2	30:00	68.7	51.7	52.7	50.6	49.2
10:30	2	30:00	75.5	51	51.9	50.1	48.6
11:00	2	30:00	66.5	51.1	52.1	50.1	49
11:30	2	30:00	65	50.9	52.2	49.8	48.4
12:00	2	30:00	65.8	50.7	51.7	49.9	48.6

Table B1 – Fully tabulated noise measurement results