Azymuth Acoustics UK

Professional Acoustic Services

Approved by: Matthew Gibson
Date: 04/02/2020

Noise Impact Assessment
Ref: Z36670

Proposed 8no. New Build Dwellings

Former Northern Moor Medical Centre
Moorcroft Road
Wythenshawe
Manchester
M23 0AF

For

Branley Homes Limited
York House
Bridgenorth Avenue
Urmston
Manchester
M41 9PA





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
E-mail: dominic@acousticsuk.com
Web: www.acousticsuk.com

Document Status – Final

Reference: Z36670			**Date:** 04/02/2020
Produced by:		Jamie Wilson AMIOA	04/02/2020
Checked by:		Dominic McCann MIOA	04/02/2020
Approved by:		Matthew Gibson	04/02/2020

Disclaimer

This report has been prepared by Azymuth Acoustics UK with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating our Standard Terms and Conditions of Business and taking into account the resources devoted to it by agreement with the Client.

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

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own discretion and risk.

Contents

1.0	**Introduction**	**4**
2.0	**Baseline Noise Survey**	**5**
2.1	Measurement Procedures	5
2.2	Results of Noise Measurements	6
2.3	Description of Noise Climate	6
3.0	**Assessment Criteria**	**6**
3.1	ProPG: Planning and Noise - May 2017	7
3.2	National Planning Policy Framework (NPPF) 2018	7
3.3	British Standard 8233: 2014	7
3.4	W.H.O Guidelines on Community Noise	8
3.6	Recommended Noise Assessment Criteria	8
4.0	**Assessment of Noise levels**	**8**
4.1	Noise Risk Assessment (ProPG)	8
4.2	Road Traffic Noise Assessment	9
4.3	Noise from Park Hotel Beer Garden	9
5.0	**Recommendations for Noise Mitigation**	**10**
5.1	Glazing Specification	10
5.2	Ventilation Specifications	11
5.3	Boundary Treatment	12
5.4	Other Elements of Building Envelope	13
6.0	**Conclusions**	**14**
Appendix A Glossary of Acoustic Terms		**15**
Appendix B Full results of noise measurement survey		**16**

1.0 Introduction

Azymuth Acoustics UK is appointed by Branley Homes Limited to review and discharge planning condition no.17 of planning application no. 124205/FO/2019. The validated planning application is for 8No new build houses at Former Northern Moor Medical Centre, Moorcroft Road, Wythenshawe. To assist with condition 17, we have undertaken a Noise Impact Assessment. The development involves the demolition of Former Northern Moor Medical Centre in to 8no. houses. Each house is 3 storeys.

The development site is bounded by Sledmoor Road / the Park Hotel Public House to the South West, by Moorcroft Road / commercial units to the North West and residents North / South East.

This noise assessment report is intended to provide information relating to potential noise levels affecting the site in order to discharge the following planning conditions (no. 17 relating to application no. 124205/FO/2019) relating to noise at the site.

17) Before the development is occupied a scheme for acoustically insulating the proposed residential accommodation against noise from The Park Hotel shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial / industrial premises. The approved noise insulation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data must include measurements taken during a rush-hour period and night-time to determine the appropriate sound insulation measures necessary. The following noise criteria will be required to be achieved: Bedrooms (night time - 23.00 07.00) 30 dB Laeq (individual noise events shall not exceed 45 dB Lamax by more than 15 times) Living Rooms (daytime - 07.00 - 23.00) 35 Db Laeq Gardens and terraces (daytime) 55 dB Laeq

Reason - To secure a reduction in noise from traffic and other sources in order to protect future residents from noise disturbance pursuant to policy DM1 of the Core Strategy and saved UDP policy DC26.

The Noise Impact Assessment covers the following key elements:

- The results of a baseline noise survey undertaken at the proposed development site.
- The appropriate assessment criteria and guidance relating to noise in the environment as associated with this kind of development.
- An assessment of the appropriate level of protection and mitigation against noise that should be provided as part of the development.

2.0 Baseline Noise Survey

2.1 Measurement Procedures

The instrumentation used for the environmental noise survey consisted of a SvanTek 959 Type 1 precision sound level meter and 01dB calibrator. The meter was calibrated before and after the noise measurements. The sound level meter records A-weighted (fast response) noise levels as well as octave band data for all measurements recorded.

The daytime survey was undertaken on 24th / 27th January 2020 between 14:02 – 15:35hrs for the Former and between 08:09 – 09:10 during rush hour traffic for the latter. The night-time survey was undertaken on 29th / 30th January 2020 between 22:51 – 00:37hrs. Local weather at the time of survey was mixed, with damp roads due to occasional showers; measurements were not undertaken during periods of rain. Wind speeds were generally low (<5mph).

The ambient noise measurements were undertaken using the sound level meter microphone at the locations shown in Figure 1 below.

The sound level meter was positioned at the following measurement locations on the site:

- Position 1: South West perimeter nearest to Sledmoor Road / The Park Hotel, approx. 4 – 5m from roadside.
- Position 2: North West perimeter along Moorcroft Road, approx. 5 – 6 m from roadside.
- Position 3: North East perimeter along Moorcroft Road, approx. 5 – 6 m from roadside.



Figure 1: Site plan with noise measurement positions marked in red

2.2 Results of Noise Measurements

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

The following table summarises the results of the noise measurements undertaken at the proposed site in terms of the average daytime (07:00 to 23:00 hours) and night-time (23:00 to 07:00 hours) statistical noise levels.

Location	Time	L_{Amax}	L_{Aeq}	L_{A1}	L_{A10}	L_{A50}	L_{A90}
1. South West perimeter	Day	73.7	58.2	69.1	60.0	53.7	49.6
	Night	66.5	50.3	60.2	51.5	45.1	41.2
2. North West perimeter	Day	76.2	64.5	72.2	67.8	61.7	54.4
	Night	72.7	54.0	66.3	54.5	44.9	40.7
3. North East perimeter	Day	75.6	64.1	72.3	67.9	60.4	52.4
	Night	68.6	51.9	62.4	49.9	40.7	37.7

Table 1: Results of Azymuth Acoustics UK noise measurements, January 2020

2.3 Description of Noise Climate

The noise climate in the area for daytime periods is dominated by road traffic using Moorcroft Road and other surrounding roads, as well as some small contribution from customers using commercial unit opposite to the proposed site. In addition, noise from passer-by also contributes to the noise climate.

During the night-time periods the noise climate is mainly dominated by road traffic using Moorcroft Road. At the time of survey, traffic noise gradually reduced after 00:00hrs. the distant Wythenshawe Road (B5167) provides a more constant drone of background traffic noise. Patrons using the outdoor smoking area of the Park Hotel Public House also contributed to the noise climate, with the addition of patrons exiting the pub after closing time.

Noise levels along the Moorcroft Road perimeter are typically in the range 64 – 65dB L_{Aeq} during the day and typically 50-54 dB L_{Aeq} during night-time periods.

Noise levels along the Sledmoor Road perimeter of the site are typically in the range 56 – 58dB L_{Aeq} during the day and typically in the range 49 – 52dB L_{Aeq} during night-time periods.

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) 2018
- British Standard 8233: 2014
- World Health Organisation Guidelines on Community Noise

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 perceptive 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) 2018

The NPPF provides guidance to local authorities taking into account noise in making planning decisions. Paragraph 180 of the National Planning Policy Framework (NPPF) states that planning policies and decisions should aim to:

- Avoid noise giving rise to significant adverse impacts on health and quality of life as a result of new development.
- Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions.

The National Planning Policy Framework 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 rooms	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 W.H.O. Guidelines on Community Noise

In 1980 the World Health Organisation proposed environmental health criteria for community noise including consideration of noise levels at which sleep disturbance may take place. These guidelines were amended by the World Health Organisation in 1999. The guidance suggests that an internal L_{Aeq} below 30dB is required to preserve the restorative process of sleep. This is equivalent to a free-field level of around 42 to 45dB L_{Aeq} or a façade level of 45 to 48dB L_{Aeq}, assuming open windows.

The WHO guidelines also include guidance on acceptable noise levels in outdoor amenity spaces. A level of 55dB L_{Aeq} is put forward as the limit of annoyance for daytime and evening periods.

3.5 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 $L_{Aeq,\ 16\ hr}$ in living rooms
- Daytime noise levels not to exceed 40dB $L_{Aeq,\ 16\ hr}$ in dining room / kitchen
- Daytime noise levels in bedrooms not to exceed 35dB $L_{Aeq,\ 16\ hr}$
- Night-time noise levels in bedrooms not to exceed 30dB $L_{Aeq,\ 8\ hr}$
- Night-time individual noise events in bedrooms shall not normally exceed 45dB $L_{Amax,F}$ more than 15 times.
- Daytime noise levels in amenity areas not to exceed 55 dB $L_{Aeq,\ 16\ hr}$

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 Noise Levels

4.1 Noise Risk Assessment (ProPG)

The risk assessment is based on survey data and incorporates a worst-case approach to potential night-time adverse effects. Adverse effect risk levels affecting the site are summarised in Table 3 below.

Façade Location	Noise Level Range (free field) dBA		Risk of Adverse Effect
	DAY	NIGHT	
1) South West perimeter Sledmoor Road	56 – 58	49 – 52	**Low**
2) North West perimeter Moorcroft Road	64 – 65	50 - 54	**Low - Medium**
3) North East perimeter Moorcroft Road	62 - 65	50 - 52	**Low - Medium**

Table 3: Potential adverse risk effects, various locations across the site.

As shown above, the Façades facing directly onto Moorcroft Road would represent the most significant risk in terms of potential adverse impact representing a medium – low noise risk in relation to the ProPG.

The façade facing onto Sledmoor Road / The Park Hotel Public House would represent a low noise risk. details of the proposed glazing and ventilation strategies to mitigate noise are shown in section 5.0 below.

4.2 Road Traffic Noise Assessment

Daytime noise levels along Moorcroft Road would indicate a low to medium risk in terms of potential adverse effect in new dwellings. This risk may be reduced by following a good acoustic design process. The worst-case traffic noise levels are during the rush-hour periods.

It should be noted that traffic noise levels gradually reduce after 00:00hrs; as such, the risk of adverse effect (ProPG) would be assessed as low to medium for a typical 8 hour night-time average.

All other elevations of the building would be assessed as low risk in terms of potential adverse effect for day and night-time periods.

On the basis of the measured noise levels it is estimated that an overall noise reduction of 33-35dB will be required through façades in order to achieve satisfactory conditions inside rooms facing and in close proximity to Moorcroft Road.

4.3 Noise from Park Hotel Beer Garden

It is understood that the proposed development is in close proximity to The Park Hotel Public House (approx. 20m to the nearest dwelling). It is understood that the Park Hotel operates from 12:00 – 00:00hrs 7 days a week. The PH is on Sledmoor Road and the proposed development is on the opposite side with only first floor toilet windows opening onto this façade.

During the time of survey noise from The Park Hotel was relatively quiet, with the exception of noise from the occasional customer(s) using the beer garden. It is estimated that customer noise from The Park Hotel was 50 – 53dB $L_{Aeq,\ 5mins}$ during the time of survey, however it is envisaged that during warm summer months, the beer garden could be busy until closing time i.e. around 23:50hrs and hence the number of customers may increase.

The following table provides an estimate of noise impact from nominally 16 no. customers within the outdoor area based on:

- 2 no. persons raised voice and
- 14 no. persons normal voice at any one time

NB: Accurate prediction of noise from users of outdoor smoking areas etc. is problematic due to the unpredictability / variability of those using such facilities. As such, the predictions below should be seen as a guide only.

Parameter	Location	Octave Band Centre Frequency (Hz)							Total dBA
		63	125	250	500	1k	2k	4k	
16 no. persons talking within beer garden (estimate)	@1m	55	60	65	70	65	58	55	70
Estimated external specific level at residential receptor	Receptor @≈20m distance	29	34	39	44	39	32	29	44
Off axis directivity factor for nearest bedroom window = - 5dB	Receptor @≈20m distance	24	29	34	39	34	27	24	39
Estimated internal sound level assuming partially open windows	Inside receptor @≈20m	≤21	≤26						
MCC noise limit in specific frequency band	Inside receptor @≈20m	47	41						
Compliant?		Yes	Yes						
Background Sound Level $L_{A90,45min\ 22:51-23:21}$	Position 1								42
Specific level compared with BSL	Receptor @≈20m								-3

Table 4: Estimated noise levels, users of beer garden 22:51 - 23:21

The estimated worst-case noise impact from typical users of the beer garden would be 3dBA or greater below the prevailing BSL until 23:21 night-time periods.

5.0 Recommendations for Noise Mitigation

This section sets out the recommended minimum noise mitigation measures required to ensure satisfactory acoustic conditions inside habitable rooms throughout the scheme.

5.1 Glazing Specifications

The appropriate glazing specifications for the new dwellings based on the current proposed layout are summarised in Table 5 and Figure 2 below.

Location (Bedrooms, Living Rooms, Dining Rooms)	Glazing Acoustic Specifications	Suggested Glazing Types
Zone A (Orange): generally, elevations and side façades of dwellings facing onto Moorcroft Road	Airborne sound insulation min. R_W 32dB and R_W+C_{tr} 29dB	Acoustically rated double glazing (e.g. 6mm float glass /16mm cavity / 4mm float glass)
Zone B (GREEN): All other side façades	Airborne sound insulation min. R_W 29dB and R_W+C_{tr} 26dB	Standard good quality double glazing with robust acoustic test data to prove SI performance

Table 5: Recommended ventilation specifications for new houses, Moorcroft Road site.

5.2 Ventilation Specifications

The recommended ventilation strategy based on the current proposed layout are summarised in Table 6 and Figure 2 below.

Location (Bedrooms, Living Rooms, Dining Rooms)	Suggested Ventilation Specifications	Window slot vent trickle ventilation (where applicable)
Zone A (Orange): generally, elevations and side façades of dwellings facing onto Moorcroft Road	System 3 mechanical extract ventilation Acoustically rated trickle vents Opening windows for purge ventilation is deemed to be generally acceptable	$D_{n,e,w}$ (open) ≥33dB
Zone B (GREEN): All other side façades	Any vent system to meet Approved Document F incl. Natural ventilation via opening windows Basic acoustically rated trickle vents Typically, will use same system 3 mech vent extract as Zone A	$D_{n,e,w}$ (open) ≥30dB

Table 6: Recommended ventilation specifications for new houses, Moorcroft Road site.

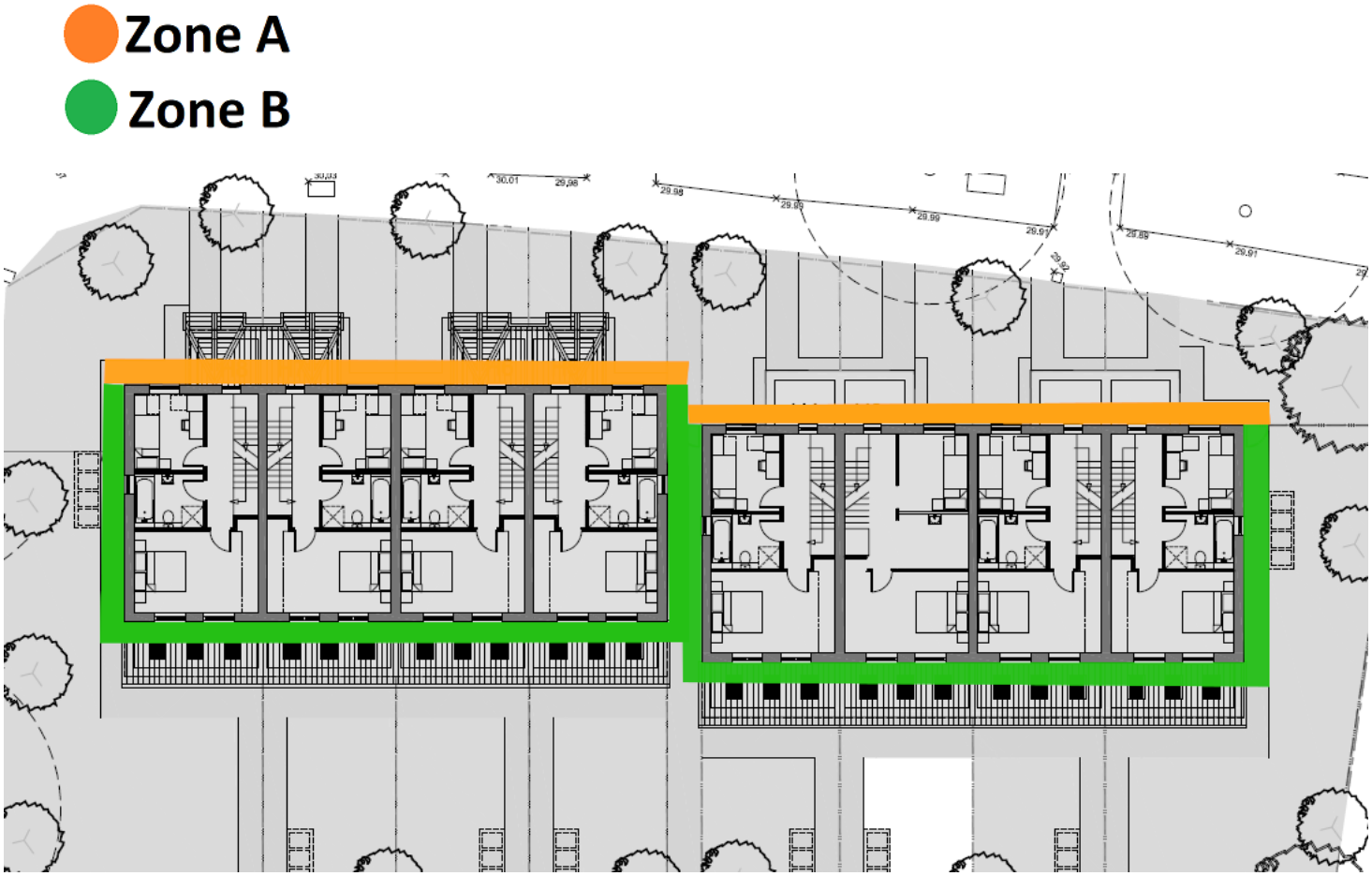

Figure 2: Glazing and ventilation Specification Zones for new houses, Moorcroft Road Site

5.3 Boundary Treatments

Based on the measured data it can be seen that outdoor amenity space / gardens near to Moorcroft Road and Sledmoor Road boundary of the site may be affected by general road traffic. Additionally, customer noise from the nearby Park Hotel Public House smoking area could cause disturbance on future residents using amenity areas / gardens, and as such site screening is recommended to achieve 55 dB $L_{Aeq,\ 16\ hr}$ during the daytime.

The proposed site / location plan (drawing 4403/001) indicates the boundary treatments for the development. In terms of site screening, the proposed boundary treatment is likely to provide sufficient protection from traffic / customer noise in amenity areas. Figure 3 below indicates the proposed boundary treatments as per the site / location plan.



Figure 3: Proposed boundary treatment as relates to the Moorcroft Road site.

5.4 Other Elements of Building Envelope

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

- External Walls: minimum sound insulation R_W 50dB. This minimum is likely to be significantly exceeded by a normal brickwork cavity wall façade.
- Roof: minimum sound insulation R_W 45dB. This minimum would likely be exceeded with a traditional slate tile roof with mineral wool loft insulation above plasterboard ceilings.

6.0 Conclusions

Azymuth Acoustics UK has undertaken a a noise impact assessment for 8No new build dwellings at Former Northern Moor Medical Centre, Moorcroft Road, Wythenshawe.

The noise climate in the area for daytime and night-time is mainly dominated by road traffic using Moorcroft Road, with small contribution from passer-by and customers using the commercial units opposite the proposed development. The site is considered as being a moderately quiet location.

As discussed, the measured night-time noise levels at position 1 indicate that the Park Hotel Public House had little impact on the overall noise climate, however, section 4.2 estimates the potential impact of customers using the smoking area during summer months. The estimated worst-case noise impact from typical users of the beer garden would be 3dBA or greater below the prevailing BSL until 23:21 night-time periods.

Proposed development near to the Moorcroft Road perimeter would present a Low – Medium risk of adverse effect as relates ProPG assessment methodology, with other elevations presenting a low risk of adverse effect.

As such, the findings of the assessment are that the residential development should be protected by noise mitigation measures including:

To comply with **Condition 17** of the planning consent:

- Acoustic double glazing to rooms on all elevations exposed to road traffic noise on Moorcroft Road as item 5.1 (orange) with standard glazing on all other facades (indicated green).

- Zone A - System 3 mechanical extract ventilation Acoustically rated trickle vents as item 5.2. Opening windows for purge ventilation is deemed to be generally acceptable - $D_{n,e,w}$ (open) ≥33dB (indicated orange)

- Zone B - Any vent system to meet Approved Document F incl. Natural ventilation via opening windows and basic acoustically rated trickle vents as item 5.2. Typically, will use same system 3 mech vent extract as Zone A - $D_{n,e,w}$ (open) ≥30dB (indicated green)

- The proposed boundary treatment (as shown in drawing 4403/001) is likely to provide sufficient protection from traffic / customer noise in amenity areas during the daytime periods.

Appendix A – Glossary of 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 20 Hz to 20 kHz. 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 60 dB, after the source has been switched off, is known as the reverberation time. 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 flowing towards the wall in the source room and the total amount of energy entering the receiving room (usual range 100 - 3150 Hz 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 – Graphical Results of Sound Insulation Tests

Appendix B – Full Tabulation of Noise Survey Results

Start	Position	Time	L_{Amax}	L_{Aeq}	L_{A1}	L_{A10}	L_{A50}	L_{A90}
Daytime 24th January 2020								
14:02'26	1	00:05'00	75.2	58.2	70.3	60.2	53.1	49.8
14:07'26	1	00:05'00	77.4	59.2	72.2	59.9	53.1	49.5
14:12'26	1	00:05'00	75.2	58.5	70.7	60.3	53.3	49.1
14:17'26	1	00:05'00	72	56.2	67.6	58.6	52.3	49.2
14:22'26	1	00:05'00	73.6	58.1	68.9	60.8	53.7	48.6
14:27'26	1	00:05'00	70	55.3	66.6	57.5	51.9	47.9
14:33'14	1	00:05'00	74.7	61.3	70.2	65.2	58.2	49.6
14:38'14	2	00:05'00	75	61.9	69.6	66	59.1	51.6
14:43'14	2	00:05'00	74.7	63.3	71.2	67.1	60.9	53.4
14:48'14	2	00:05'00	74	63.4	71	67.4	60.5	53
14:53'14	2	00:05'00	73.1	64.1	70.7	66.8	63.2	57.8
14:58'14	2	00:05'00	74	62.6	69.6	66.3	60.6	52.7
15:04'24	2	00:05'00	79.8	65.4	76.1	68.7	61.1	54
15:09'58	3	00:05'00	76	64.8	74.8	68.6	60.4	50.9
15:14'58	3	00:05'00	76.3	63.6	72.1	68.1	59.2	49.2
15:19'58	3	00:05'00	76.8	64	71.7	67.8	60.8	54.2
15:25'26	3	00:05'00	83.3	65.6	74.7	68.6	60.1	50.8
15:30'26	3	00:05'00	73.5	63	72	67.3	58.3	50.5
Daytime 27th January 2020 (Morning rush hour)								
08:09'36	2	00:05'00	75.6	62.5	71.2	66.2	59.8	53.6
08:14'36	2	00:05'00	80.2	64	72.8	67.6	60.2	53.1
08:19'36	2	00:05'00	73	64.4	71	68.4	62.2	53.2
08:24'36	2	00:05'00	82.5	67.4	77.4	70.9	64.8	56
08:30'02	2	00:05'00	78.4	66	73.9	69.7	63.9	56.4
08:35'02	2	00:05'00	73.6	65.3	71.7	68.9	63.7	57.7
08:40'42	3	00:05'00	74.3	64.5	71.8	68.1	62.7	55
08:45'42	3	00:05'00	75.2	64.1	71.7	67.7	61.9	55.7
08:50'42	3	00:05'00	73.3	64.2	71.5	68.1	61.9	54.6
08:55'42	3	00:05'00	72	62	70.2	66.6	58.2	50.6
09:00'30	1	00:05'00	73.7	56.9	67.9	57.9	53.8	51.2
09:05'30	1	00:05'00	71.2	57.3	67.7	59.8	53.8	51.3
Evening / Night-time 29th / 30th January 2020								
22:51'08	1	71.8	52.9	64.7	53.6	47.7	42.9	71.8
22:56'08	1	67.9	49.9	59.8	52.1	45.5	42.1	67.9
23:01'08	1	61.1	49.8	58	53.8	46.7	43.6	61.1
23:06'08	1	74.4	52.6	65.5	50.9	46.1	41	74.4
23:11'08	1	58.7	44.8	53	47.3	42.9	40.7	58.7
23:16'08	1	68.3	49.4	62	49.4	43.6	38.9	68.3
23:22'10	2	69.6	53.2	65.6	56.2	44.4	40.5	69.6
23:27'10	2	71.7	50.6	64.4	45.5	41.3	39.1	71.7
23:32'10	2	77	54.2	65.7	56.6	46.5	42.7	77
23:37'36	2	70.1	54	66.6	56.5	42.4	38.2	70.1

23:42'36	2	75.8	55.7	67.2	57.3	47.4	42.2	75.8
23:47'50	2	72.1	54.7	68.2	54.9	47.3	41.7	72.1
23:53'46	1	59.5	47.1	56.2	50.1	44.5	41.1	59.5
23:58'46	1	66.1	50.4	59.5	54.4	46.5	42.2	66.1
00:05'32	3	58.8	41.6	49	43.3	40	37.7	58.8
00:10'32	3	72.5	52.5	65.5	51.3	41.7	38.4	72.5
00:15'48	3	67.8	50.1	63.3	52	39.8	36.9	67.8
00:20'48	3	69.9	50.3	64.5	47.2	38.8	36	69.9
00:25'46	3	74	55.7	69.5	55.6	43	39.4	74
00:32'54	1	70.9	50.9	63	51.5	42.1	38.6	70.9