



Azymuth Acoustics UK

Professional Acoustic Services

Noise Impact Assessment

Ref: AA0578 RevA

Car Wash & Valet

144 Bradford Road,
Manchester,
M40 7AS

On behalf of

I.Planning Services

2A Cook Street,
Bury,
BL9 0RP



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

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Ref: AA0578	Signature:	Name:	Date:
Produced by:		Ollie Platts BSc (Hons), DIPL, AMIOA	07/05/25
Checked by:		Dominic McCann, BEng (Hons), MIOA, Director	08/05/25
Approved by:		Matthew Gibson, BEng (Hons), CEng, CEnv, Director	08/05/25

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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	Summary of Measurements	6
2.3	Description of Noise Climate	6
3.0	Assessment Criteria	7
3.1	National Planning Policy Framework (NPPF) 2021	7
3.2	British Standard 8233: 2014	7
3.3	World Health Organisation Environmental Noise Guidelines (ENG) 2018	7
3.4	British Standard 4142:2014+A1:2019	8
3.5	Recommended Noise Assessment Criteria	8
4.0	Assessment of Results	9
4.1	SoundPLAN Model	9
4.2	BS 4142 Assessment – Residential Dwellings.....	10
4.3	BS 8233 Assessment – Commercial Premises	10
5.0	Summary.....	11
	Appendix A – Glossary of Acoustic Terms.....	12
	Appendix B – Noise Survey Data	13

1.0 Introduction

Azymuth Acoustics UK (henceforth Azymuth) has been contracted by I.Planning Services to undertake a Noise Impact Assessment (NIA) in relation to a proposed car wash and valeting service to be located at 144 Bradford Road, Manchester.

The operational hours of the premises are understood to be from 09:00hrs till 18:00hrs, for both weekdays and weekends.



Figure 1 – Proposed development site plan

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

- The results of a baseline noise survey undertaken in the vicinity of 144 Bradford Road, Manchester
- 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

It is assumed that all drawings and information provided by the client is up to date and correct.

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 10:38hrs - 15:14hrs on Tuesday 25th February as well as between 08:24hrs - 09:26hrs on Thursday 27th February 2025.

Evening noise level measurements were undertaken between 17:51hrs and 18:58hrs on Wednesday 5th March 2025.

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

- Position 1: On-site (~8m from roadside)
- Position 2: Gleden Street (~1.5m from roadside)
- Position 3: Varley Street (~5m from roadside)

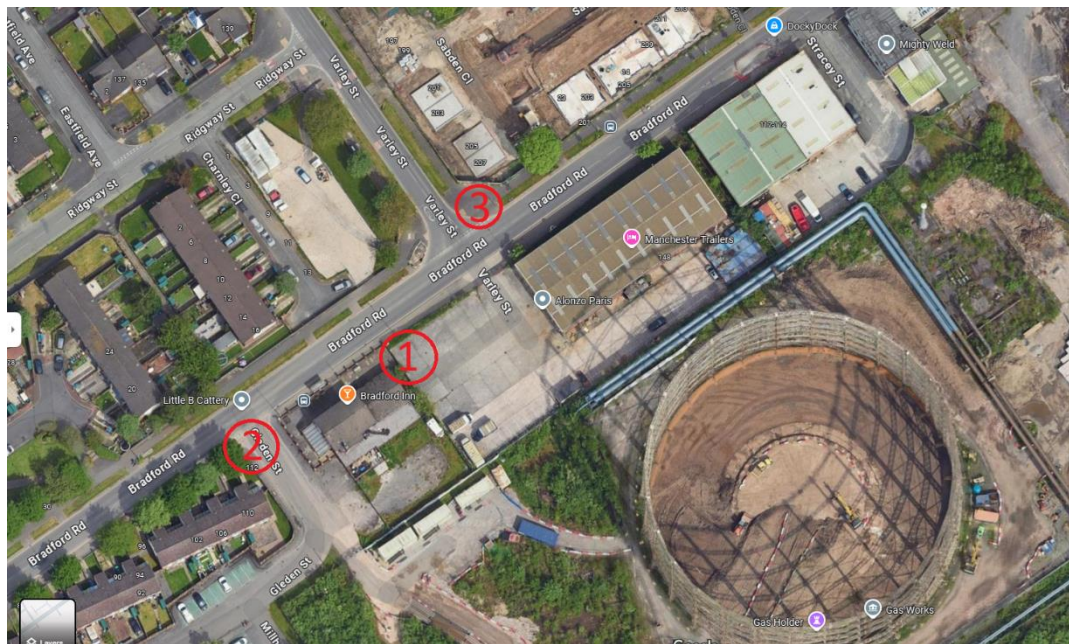


Figure 2 – Noise measurement position(s)

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 noise levels.

Location	Period	L _{AFmax}	L _{Aeq}	L _{A10}	L _{A50}	L _{A90}
1) On-site	Day	80.5	67.6	71.5	61.9	52.8
2) Gleden Street	Day	81.3	68.3	71.9	62.3	51.5
3) Varley Street	Day	82.5	72.6	73.2	65.1	56.1

Table 1 – Summary of noise measurements

Azymuth assumes that all measured noise levels are typical of the surrounding environment.

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 impacting the site is road traffic noise from Bradford Road, with some contributions from Gleden Street and Varley Street. The site is also boarded by the Bradford Inn pub which is open 12:00hrs till 23:00hrs every day.

Excavation works were taking place at the Bradford Road / Varley Street junction throughout Tuesday 25th February 2025 measurements, mainly impacting position 3. Temporary traffic lights for a one-way system were set up, changing frequently (every ~1min) to let traffic either side flow regularly. This system was in place on all measurement days.

The weather during the measurement procedures was mild and dry with average wind speeds ranging from 5 to 10mph.

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:

- National Planning Policy Framework (NPPF 2021)
- British Standard 8233:2014
- World Health Organisation Guidelines on Community Noise
- British Standard 4142:2014+A1:2014

3.1 National Planning Policy Framework (NPPF) 2021

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’.

3.2 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

3.3 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.

3.4 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.”

3.5 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 noise on the surrounding environment.

- Noise levels originating from the proposed premises shall not exceed the background sound level at the nearest residential receptors believed to be located at Charnley Close, Varley Street and Bradford Road

We would not anticipate the background sound level to be significantly different during weekends, hence the above criteria can be applied at all times during the proposed opening hours.

4.0 Assessment of Results

4.1 SoundPLAN Model

Azymuth has undertaken acoustic modelling with the SoundPLAN 9.1 noise modelling software to predict and visualise the impact of noise from the site on the surrounding environment.

It is understood 1no. jet wash bay and 1no. valeting station are to be located in the western corner of the site. The jet wash bay and valeting station have been modelled to operate at full capacity from 09:00hrs till 18:00hrs to replicate a worst-case noise scenario.

Azymuth undertook measurements of a local jet wash on Walshaw Road, Bury, with the sound level meter positioned ~1m from the jet on a full power operation as a basis for typical jet wash noise.

The following sound power spectrums have been derived for a typical jet wash and valeting station in the noise model:

Unit	Centre Frequency Octave Band Sound Power Level (dB)								Total L _{WA} (dB)
	63	125	250	500	1k	2k	4k	8k	
Jet Wash	74.6	82.0	80.4	81.7	82.5	84.1	84.9	83.5	91
Valeting Station	77.9	73.6	71.7	76.6	71.9	75.6	85.1	67.9	87

Table 3 – Octave band sound power levels

4.1.1 Grid Noise Map (GNM)

Azymuth have produced the following GNM to visualise the effect of jet wash and valet noise emitting from the premises on the surrounding environment.

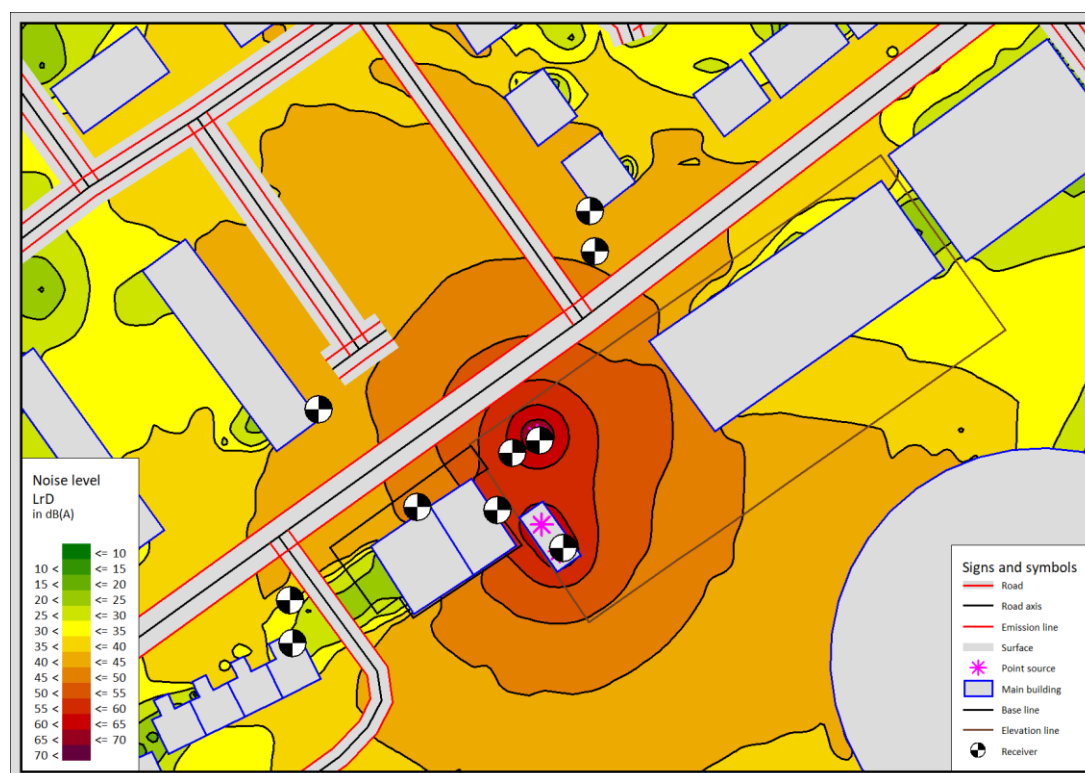


Figure 3 – Daytime GNM of noise from the premises



4.2 BS 4142 Assessment – Residential Dwellings

The following table identifies the nearest noise sensitive receptors, the predicted sound level as a result of noise from the car wash/valet at these receptors and how this noise level relates to the background sound level. Distances have been measured from the jet wash bay to the nearest receptor window.

A penalty of +3dB has been applied to account for any acoustic characteristics associated with the units.

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
Nearest Residential Receptors for BS 4142						
16 Charnley Close	38	44.4	56.1	+3.0	47.4	-8.7
207 Varley Street	40	44.7	56.1	+3.0	47.7	-8.4
112 Bradford Road	57	26.4	51.5	+3.0	29.4	-22.1

Table 4 – BS 4142 assessment of noise originating from proposed premises

It can be seen from the values tabulated above that noise levels from the proposed units will be at least ~8dB below the background sound level at the nearest residential receptors, indicating no noise impact as per BS 4142.

4.3 BS 8233 Assessment – Commercial Premises

Although not strictly a restaurant Azymuth have followed the indoor ambient noise level guidance for a restaurant to assesses the noise break-in at Bradford Inn. The indoor ambient noise level guidance for restaurants is 40-55dB $L_{Aeq,T}$ as stated in BS 8233.

Assuming ~13dB of attenuation for a partly open window, Azymuth have derived an external noise limit of ~58dB for the commercial receptor.

The following table assesses noise produced by the car wash/valet at the nearest commercial receptor and how this relates to the external noise limit.

Receiver	Distance from Source to Receiver (~m)	Noise Level at Receptor (dBA)	External Noise Limit (dBA)	Noise Level re. External Noise Limit
Commercial Receptors (not covered by BS 4142)				
Bradford Inn ground floor window	15	56.7	58	-1.3
Bradford Inn first floor window	25	46.4	58	-11.6

Table 5 – BS 8233 assessment of noise originating from proposed premises

It can be seen from the values tabulated above that noise levels from the proposed units will be at least ~1dB below the background sound level at the nearest commercial receptor, indicating no noise impact as per BS 8233.

5.0 Summary

Azymuth have been contracted by I.Planning Services to undertake a Noise Impact Assessment (NIA) in relation to a proposed car wash and valeting service to be located at 144 Bradford Road, Manchester. The operational hours of the premises are understood to be from 09:00hrs till 18:00hrs, for both weekdays and weekends.

Noise associated with the development is expected to originate from the jet wash bay and valeting station.

A baseline noise survey has been undertaken in the vicinity of the site, background noise levels were measured to be between 52-56dB L_{A90} at the nearest receptor locations believed to be located at Charnley Close, Varley Street and Bradford Road.

Azymuth have produced a noise model in SoundPLAN 9.1 to predict and visualise the impact of noise associated with the car wash/valet on the surrounding environment.

Azymuth has undertaken a BS 4142 assessment of the noise associated with the premises. It has been found that noise levels at the nearest worst-affected residential receptor, located on Charnley Close, shall be at least 8dB below the associated background sound level and would therefore produce no significant impact as per BS 4142.

Azymuth has undertaken a BS 8233 assessment of the noise associated with the premises. It has been found that noise levels at the nearest worst-affected commercial receptor, Bradford Inn, shall be at least 1dB below the associated external noise limit and would therefore produce no significant impact as per BS 8233.

Azymuth do not anticipate the background sound level to be significantly different during weekends, hence the above BS 4142 and BS 8233 assessments are valid at all times during the proposed opening hours.



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}
Tuesday 25th February 2025							
10:43:00	1	00:05:00	80.4	68.1	72.8	63.9	53.2
10:48:00	1	00:05:00	79.5	68	73.3	61.1	51
10:53:00	1	00:05:00	78.7	66.7	71	59.4	51.9
10:58:00	1	00:05:00	80	68.9	73	65.4	51.7
11:07:00	1	00:05:00	90.8	72	74.6	65	52.8
11:12:00	1	00:05:00	78.7	67	72	59.9	53
11:17:00	1	00:05:00	89.3	68.5	72.1	61.4	51.2
11:22:00	1	00:05:00	79.4	67.1	71.7	61.9	56.3
11:27:00	1	00:05:00	78.2	65.8	69.5	60.7	56.2
11:32:00	1	00:05:00	75.6	65.3	69.1	62.5	55.6
11:37:00	1	00:05:00	79.8	66.3	70.3	62.6	53.9
11:42:00	1	00:05:00	78.3	65.7	69.9	60.7	51.8
11:48:00	2	00:05:00	92.8	70.3	71.5	61.1	52.1
11:53:00	2	00:05:00	78.8	67	71.2	62.1	52.4
11:58:00	2	00:05:00	79.1	68.2	72.7	62.9	53.6
12:03:00	2	00:05:00	90.1	69	72.3	62.1	52.9
12:08:00	2	00:05:00	76.7	67	71.6	61.3	52.5
12:13:00	2	00:05:00	80.1	68.3	72.1	65.7	55.8
12:18:00	2	00:05:00	78.7	66.2	70.7	60.5	52.8
12:23:00	2	00:05:00	79.1	68.2	71.6	66.2	53
12:30:00	1	00:05:00	78.6	67.6	72.3	62	52.3
12:35:00	1	00:05:00	83.4	65.7	70	59.3	50.7
12:40:00	1	00:05:00	75.3	66.7	70.8	64.2	52.8
12:45:00	1	00:05:00	81.7	66.7	70.8	60.2	51.1
14:19:00	3	00:05:00	88.8	69.4	71.5	65.2	55.2
14:24:00	3	00:05:00	90.3	75.2	79	68.2	57.1
14:29:00	3	00:05:00	92.6	78.4	82.7	68.9	58.9
14:34:00	3	00:05:00	93.6	77.4	81.3	69.5	58.7
14:39:00	3	00:05:00	89.2	73.9	77.8	67.6	54.9
14:44:00	3	00:05:00	92	76.3	80	68	57.3
14:49:00	3	00:05:00	94.1	78	80.3	67.6	58.8
14:54:00	3	00:05:00	84.4	66.1	68	58.7	53.8
Thursday 27th February 2025							
08:29:00	2	00:05:00	86.4	70.3	74.6	63.3	50.8
08:34:00	2	00:05:00	80.6	69.2	74.8	60.6	51.6
08:39:00	2	00:05:00	80.4	65.9	71.1	56.1	46.9
08:44:00	2	00:05:00	80.6	70.1	75.2	63.7	49.5
08:49:00	2	00:05:00	79.8	71.4	75.4	69.2	51.8
08:54:00	2	00:05:00	88	71.7	75.6	67.2	53.7
09:01:00	3	00:05:00	78	68.4	72	66.6	59.7
09:06:00	3	00:05:00	76.3	68.9	72.1	68	60.8
09:11:00	3	00:05:00	79.6	69	72.4	67.3	59.9
09:16:00	3	00:05:00	79.2	68.8	72	67.4	60
09:21:00	3	00:05:00	80.6	68.5	71.6	66.8	60.1
09:26:00	3	00:05:00	75.2	67.5	71.1	66.2	57.2



Start	Position	Time	L _{Amax}	L _{Aeq}	L _{A10}	L _{A50}	L _{A90}
Wednesday 5th March 2025							
17:56:00	2	00:05:00	76.9	65.1	69.4	61.7	52.4
18:01:00	2	00:05:00	87.3	67.6	71	62.4	49.1
18:06:00	2	00:05:00	78.1	65.6	70.2	60.8	50.5
18:13:00	3	00:05:00	76	65.8	69.4	64.6	53.3
18:18:00	3	00:05:00	74.5	65.4	68.9	64	52.6
18:23:00	3	00:05:00	73.8	64.8	68.7	62.6	51.1
18:31:00	2	00:05:00	78.4	65.1	69.4	60.3	50.8
18:36:00	2	00:05:00	79.2	65.4	69.1	60.9	48.7
18:41:00	2	00:05:00	75.5	63.8	67.9	57.9	48.9
18:48:00	3	00:05:00	77.2	64.8	69	60.2	50.3
18:53:00	3	00:05:00	76.2	63.8	68.1	58.3	51.7
18:58:00	3	00:05:00	78.1	62.8	67.4	57.2	50.5

Table B1 – Fully tabulated daytime noise measurement results