Noise Impact Assessment

C11022

Former Suregrow Garden Centre, St Helens

Prepared for:

Lynwoods Building Consultancy
Rivington Works
Rivington Avenue
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Executive Summary	
Site Address	Former Suregrow Garden Centre, St Helens

Executive Summary

At the time of issuing this Assessment, no information was available for any proposed noise-generating activities or any proposed mechanical and electrical plant. As such, this Assessment has set mechanical and electrical plant noise emission limits for the closest residential receptors which should not be exceeded.

It should be noted that the rated level of noise may contain character corrections for tonality, impulsivity and intermittency of the proposed noise sources and so the specific noise level (measurable noise level) at the closest dwelling may be lower than this noise level.

It is recommended that this Noise Impact Assessment is updated at a later stage when precise detail of noise generating activities is known.

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APPENDICES

1 INTRODUCTION

1.1 Background

Omnia was instructed by Lynwoods Building Consultancy to prepare a Noise Impact Assessment (the 'Assessment') to support a planning application for a proposed commercial development (the Development) at the former Suregrow Garden Centre in St Helens, to be referred to hereafter as 'the Site'.

This Assessment has been undertaken to identify and assess all potential noise generating activity at the Development and its potential noise impact upon the surrounding existing residential dwellings.

Accordingly, this Assessment has been completed with due regard to the National Planning Policy Framework and its associated National Planning Policy Guidance. In addition, various British Standard and guidance documents exist which are applicable to the assessment of noise impacts and these are detailed in Section 2.

1.2 Site Location and Proposed Development

The Site is located at the former Suregrow Garden Centre on Merton Bank Rd in Saint Helens WA9 1HY.

It is understood that proposals include for 14 new commercial units.

It is understood that pre-application discussions have taken place with St Helens Council who have advised the following with regards to noise:

> '*The Council's Noise Officer has reviewed the proposed development. They consider from the information submitted that it is not clear what commercial noise generating activities are associated with the operation and use of the proposed new build industrial/storage units. Residential units are also in proximity of the proposed new build industrial/storage units. Therefore, a 'Noise Assessment' report is required to be submitted at application stage. This document will provide essential information to recommend advice and/or noise conditions to protect the future occupiers sand the locality.*
>
> '*The scope of the Noise Assessment is to include any noise generating activities, which are associated with the operation and use of the proposed development. These activities should be assessed in terms of the methodology outlined in BS 4142:2014(+2019 update) to determine the potential impact on the nearest noise sensitive receptors. The acceptable standards of exposure at the nearest sensitive receptors are provided in BS 8233:2014, and the achievement of those exposure standards (with or without mitigation) should be referred to in any assessment provided.*
>
> *The Noise Assessment should be able (as a minimum):*
>
> *· To provide a detailed review of the proposed development*
> *· To provide a description of the surrounding area and the noise sources that are being assessed*
> *· To explain the method that has been applied to assess the noise, including monitoring locations, the equipment used, calibration details, a weather summary and when the survey was conducted, etc.*
> *· To assess the existing background level (a baseline provided by a Noise Survey)*
> *· To determine the impact of the proposed development on the locality*
> *· To assess the noise originating from the operation of the premises (including entertainment noise, any plant / machinery used on the premises, the rating level of noise emitted from the site, measured at the closest boundary with residential units, etc.)*
> *· To assess the noise environment any future occupants may be exposed to once the development is built and occupied (including traffic movements, etc.)*

· To recommended mitigations measures required to protect the closest noise sensitive premises (including calculations of the expected noise reduction from the noise control measures) to ensure the likely noise impact is minimised in accordance with the requirements
· To provide all reasonable noise control mitigation measures to control noise emanating from the site (internally generated noise)
· To provide all reasonable noise control mitigation measures to control externally generated noise (such as sound insulation/attenuation schemes, noise limiters, low noise equipment, distance separation, screening and acoustic barriers, building layout and design, acoustic enclosures, acoustic glazing and doors, alternative ventilation strategies, etc.).'

This Assessment has been undertaken with due regard to the supplied planning layout shown on the following planning drawings:

- 'Proposed Site Development' issued by Lynwoods Building Consultancy, dated August 2023.

The Site Layout is shown in Figure 1 of Appendix III.

1.3 Acronyms

All acronyms used within this report are defined in the Glossary presented in Appendix II.

1.4 Limitations

The limitations of this report are presented in Appendix I.

1.5 Confidentiality

This report has been prepared solely for the use of the Client. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Omnia; a charge may be levied against such approval.

2 POLICY & GUIDANCE

2.1 National Planning Policy Framework & National Planning Practice Guidance

The Government updated the National Planning Policy Framework (NPPF) on 5th September 2023 and its associated National Planning Practice Guidance (NPPG) on 22nd July 2019. Together, the NPPF and NPPG set out what the Government expects of local authorities. The overall aim is to ensure the planning system allows land to be used for new homes and jobs, while protecting valuable natural and historic environments.

The NPPG adds further context to the NPPF and it is intended that the two documents should be read together.

Noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. When preparing local or neighbourhood plans, or taking decisions about new development, there may also be opportunities to consider improvements to the acoustic environment.

Local planning authorities' plan-making and decision making should take account of the acoustic environment and in doing so consider:

- Whether or not a significant adverse effect is occurring or likely to occur;
- Whether or not an adverse effect is occurring or likely to occur; and
- Whether or not a good standard of amenity can be achieved.

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.
The Observed Effect Levels are as follows:

- Significant observed adverse effect level: This is the level of noise exposure above which significant adverse effects on health and quality of life occur;
- Lowest observed adverse effect level: this is the level of noise exposure above which adverse effects on health and quality of life can be detected; and
- No observed effect level: this is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Table 2.1 summarises the noise exposure hierarchy, based on the likely average response.

Table 2.1 Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not Noticeable	No Effect	No observed effect	No specific measures required
Noticeable and not intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No observed adverse effect	No specific measures required
Lowest Observed Adverse Effect Level			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time	Observed adverse effect	Mitigate and reduce to a minimum

	because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.		
Significant Observed Adverse Effect Level			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, 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.	Significant observed effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable adverse effect	Prevent

The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation.

These factors include:

- The source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day - this is because people tend to be more sensitive to noise at night as they are trying to sleep. The adverse effect can also be greater simply because there is less background noise at night;

- For non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise;

- The spectral content of the noise and the general character of the noise. The local topology and topography should also be taken into account along with the existing and, where appropriate, the planned character of the area.

More specific factors to consider when relevant:

- Where applicable, the cumulative impacts of more than one source should be taken into account along with the extent to which the source of noise is intermittent and of limited duration;

- Consideration should also be given to whether adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time. In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations; and,

- If external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended.

2.2 BS4142:2014+A1:2019 'Methods for Rating and Assessing Industrial and Commercial Sound'

This standard describes methods for rating and assessing sound of an industrial or commercial nature which includes:

- Sound from industrial and manufacturing processes;
- Sound from fixed installations which comprise mechanical and electrical plant and equipment;
- Sound from the loading and unloading of goods and materials at industrial and / or commercial premises; and
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from processes or premises, such as that from forklift trucks, or that from train or ship movements on or around an industrial or commercial Site.

The procedure detailed in the standard compares the measured or predicted noise level 'the specific noise level' from any of the above detailed noise sources with the background sound level at a residential dwelling. The measured background sound level at a receptor should be reliable and should not necessarily ascertain a lowest measured background sound level, but rather to quantify what is 'typical.'

The specific noise level also acknowledges the following reference time intervals depending upon whether the noise source operates during daytime or night-time periods:

- Daytime (07:00 - 23:00): 1 hour; and
- Night-time (23:00 - 07:00): 15 minutes.

There are a number of 'penalties' which can be attributed to the specific sound level, either subjectively or objectively, depending upon the 'acoustic features' of the sound level under investigation as follows. These penalties vary in their weighting depending upon the severity of the acoustic feature, as follows (with regards to the subject method):

Tonality

- +2dB: where the tonality is just perceptible;
- +4dB: where the tonality is clearly perceptible; and
- +6dB: where the tonality is highly perceptible.

Impulsivity

- +3dB: where the impulsivity is just perceptible;
- +6dB: where the impulsivity is clearly perceptible; and
- +9dB: where the impulsivity is highly perceptible.

Intermittency

- +3dB: where the intermittency is readily distinctive against the acoustic environment.

Where the assessment is carried out using the objective method, the tonality penalty is either 0dB or 6dB and the impulsivity penalty can range from 0dB up to 9dB in increments of 1dB, depending on the level of impulsivity identified.

In addition to the above acoustic features, there is a penalty for 'other sound characteristics' of +3dB where a sound exhibits characteristics that are neither tonal nor impulsive, though is readily distinctive against the acoustic environment.

BS4142 goes on to state that the rating level is equal to the specific sound level if there are no such features present or expected to be present.

Assessment of the rating level relative to the background noise level can yield the following commentary:

- Typically, the greater this difference (between the rating level and the background sound level), the greater the magnitude of impact;
- A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;
- A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context; and
- 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. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact.

Whilst the amended 2019 Standard does make various references to it not being intended to assess noise impacts at indoor locations, section 1.1 does state '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'. Example 6 in the Standard states 'In addition to the rating/background sound level comparison shown in Table A.6, the primary concern is the potential for disturbance of residents who could be sleeping with open bedroom windows. Other guidance, such as BS 8233, might also be applicable in this instance'.

With the above in mind, and for a clear need to ensure that any potential commercial or industrial noise impacts at the building façade do not give rise to internal noise level which causes sleep disturbance in bedrooms, this Assessment will ensure that the predicted rating level (specific sound level including any character corrections) does not exceed 30dB in bedrooms.

3 NOISE SURVEYS

3.1 Background Sound Survey

Omnia has undertaken a Background Sound Survey over the following period:

- 08:00 on Friday 24th November to 09:00 on Monday 27th July.

The following noise measurement position was chosen for the Background Sound Survey:

- Noise Measurement Position 1 (NMP1): The sound level meter was located approximately 50m to the south of the closest residential dwellings to the Site, located at Grantham Crescent. This noise measurement location was chosen as the sound climate was considered to be representative of the sound climate at the residential dwellings.

It is understood that the proposed commercial units can operate between 08:00 –18:00, Monday to Sunday and so the background sound levels presented in Table 3.1 cover this period only.

Table 3.1 Summary of Measured Background Noise Levels

Day	Measured Sound Pressure Levels (Mode Average), Free-Field (dB) LA90,15mins
Friday 24th November 2023	48 –49 (48)
Saturday 25th November 2023	42 –45 (44)
Sunday 26th November 2023	41 –46 (44)
Monday 27th November 2023 (07:00 –09:00)	45 –46 (45)

3.2 Noise Survey Equipment

The following equipment was used for the Noise Surveys.

Table 3.2 Noise Measurement Equipment

Measurement Position	Equipment Description	Manufacturer & Type No	Serial No.	Calibration Due Date
NMP1	Sound Level Meter	01dB Fusion	12586	29 June 2024
	Pre-amplifier	01dB PRE22	2004163	
	Microphone	GRAS 40CD	367351	
	Calibrator	01dB CAL-31	92222	01 July 2024

The sound level meters were field calibrated prior to and following the noise surveys and there was no drift beyond the allowable limit of 1dB.

During the noise surveys the weather conditions were conducive to the measurement of environmental noise, i.e. wind speeds of no more than 5m/s and dry conditions.

4 NOISE IMPACT ASSESSMENT

4.1 Proposed Commercial Noise

At the time of issuing this Assessment, there was no information available regarding the proposed uses for the commercial units or any information regarding noise levels for any proposed mechanical and electrical plant.

As such, it is necessary to set mechanical and electrical plant noise emission limits for the closest residential dwellings to the north of the Site and this is completed in Table 4.1.

Table 4.1 Calculation of Mechanical & Electrical Plant Noise Emission Limits

Lowest Measured Typical Background Sound Level, LA90,15mins (dB)	Appropriate Noise Criteria as Specified in BS4142:2014+A1:2019	Maximum Rated Noise Level at Receptor, LA,r (dB)
44	LA,r = LA90	44

The combined maximum rated level of noise at the closest residential dwelling that cannot be exceeded is 44dB LA,r.

It should be noted that the rated level of noise may contain character corrections for tonality, impulsivity and intermittency of the proposed noise sources and so the specific noise level (measurable noise level) at the closest dwelling may be lower than this noise level.

It is recommended that this Noise Impact Assessment is updated at a later stage when precise detail of noise generating activities is known.

5 MITIGATION

5.1 Commercial Noise

The previous section has set mechanical and electrical plant noise emission limits which will require adhering to in order to minimise the potential for noise complaints.

6 CONCLUSION

Omnia was instructed by Lynwoods Building Consultancy to prepare a Noise Impact Assessment to support a planning application for a proposed commercial development at the former Suregrow Garden Centre in St Helens.

This Assessment has been undertaken to identify and assess all potential noise generating activity at the Development and its potential noise impact upon the surrounding existing residential dwellings.

Accordingly, this Assessment has been completed with due regard to the National Planning Policy Framework and its associated National Planning Policy Guidance. In addition, various British Standard and guidance documents exist which are applicable to the assessment of noise impacts and these are detailed in Section 2.

The Site is located at the former Suregrow Garden Centre on Merton Bank Rd in Saint Helens.

It is understood that proposals include for 14 new commercial units.

At the time of issuing this Assessment, no information was available for any proposed noise-generating activities or any proposed mechanical and electrical plant. As such, this Assessment has set mechanical and electrical plant noise emission limits for the closest residential receptors which should not be exceeded.

It should be noted that the rated level of noise may contain character corrections for tonality, impulsivity and intermittency of the proposed noise sources and so the specific noise level (measurable noise level) at the closest dwelling may be lower than this noise level.

It is recommended that this Noise Impact Assessment is updated at a later stage when precise detail of noise generating activities is known.

END OF REPORT

APPENDIX I

LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between Omnia and the Client as indicated in Section 1.3.

2. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

3. Omnia cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by Omnia is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by Omnia in this connection without their explicit written agreement there to by Omnia.

4. Where a noise survey is required to inform the assessment, Omnia will endeavour to ensure that all noise measurements taken are robust, representative and reliable in order to inform an accurate noise impact assessment. Where limitations or constraints exist which prevent a suitable noise survey being completed, Omnia will take all reasonable steps to make the client fully aware of any such limitations or constraints with a view to achieving the best possible outcome for the client. Where additional sound surveys are required, over and above those specified in our scope of works, then Omnia reserves the right to charge additional fees.

5. Where mitigation measures are specified in our report, it should be noted that these measures are relative to a specific sound source, both in terms of the measured sound pressure level and the character of the source. Where either the sound pressure level or the character of the sound varies following completion of the sound survey, Omnia cannot be held responsible for any subsequent variations in the proposed mitigation performance.

APPENDIX II

GLOSSARY OF ACOUSTIC TERMINOLOGY

Noise is defined as unwanted sound. Human ears are able to respond to sound in the frequency range 20 Hz (deep bass) to 20,000 Hz (high treble) and over the audible range of 0 dB (the threshold of perception) to 140 dB (the threshold of pain). The ear does not respond equally to different frequencies of the same magnitude, but is more responsive to mid- frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting mechanism is used. This reduces the importance of lower and higher frequencies, in a similar manner to the human ear.

Furthermore, the perception of noise may be determined by a number of other factors, which may not necessarily be acoustic. In general, the impact of noise depends upon its level, the margin by which it exceeds the background level, its character and its variation over a given period of time. In some cases, the time of day and other acoustic features such as tonality or impulsiveness may be important, as may the disposition of the affected individual. Any assessment of noise should give due consideration to all of these factors when assessing the significance of a noise source.

The most widely used weighting mechanism that best corresponds to the response of the human ear is the 'A'-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or LAeq, LA90 etc., according to the parameter being measured.

The decibel scale is logarithmic rather than linear, and hence a 3 dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective, but as a general guide a 10 dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3 dB(A) is generally regarded as the minimum difference needed to perceive a change under normal listening conditions.

An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A1: Typical Sound Pressure Levels

Sound Pressure Level (dB)	Location/Example
0	Threshold of hearing
20 - 30	Quiet bedroom at night
30 - 40	Living room during the day
40 - 50	Typical office
50 - 60	Inside a car
60 - 70	Typical high street
70 - 90	Inside factory
100 - 110	Burglar alarm at 1m away
110 - 130	Jet aircraft on take off
140	Threshold of pain

Table A2: Terminology

Descriptor	Explanation
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean square pressure of the sound field and a reference pressure (2x10-5Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
$L_{Aeq, T}$	L_{Aeq} is defined as the notional steady sound level which, over a stated period of time (T), would contain the same amount of acoustical energy as the A –weighted fluctuating sound measured over that period.
L_{Amax}	L_{Amax} is the maximum A - weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
L_{10} & L_{90}	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The Ln indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L_{10} is the level exceeded for 10% of the time and as such can be regarded as the 'average maximum level'. Similarly, L_{90} is the 'average minimum level' and is often used to describe the background noise. It is common practice to use the L_{10} index to describe traffic noise.
Free-field Level	2A sound field determined at a point away from reflective surfaces other than the ground with no significant contributions due to sound from other reflective surfaces. Generally as measured outside and away from buildings.
Fast	A time weighting used in the root mean square section of a sound level meter with a 125millisecond time constant.
Slow	A time weighting used in the root mean square section of a sound level meter with a 1000millisecond time constant.

APPENDIX III

FIGURES

Figure 1 – Proposed Site Layout

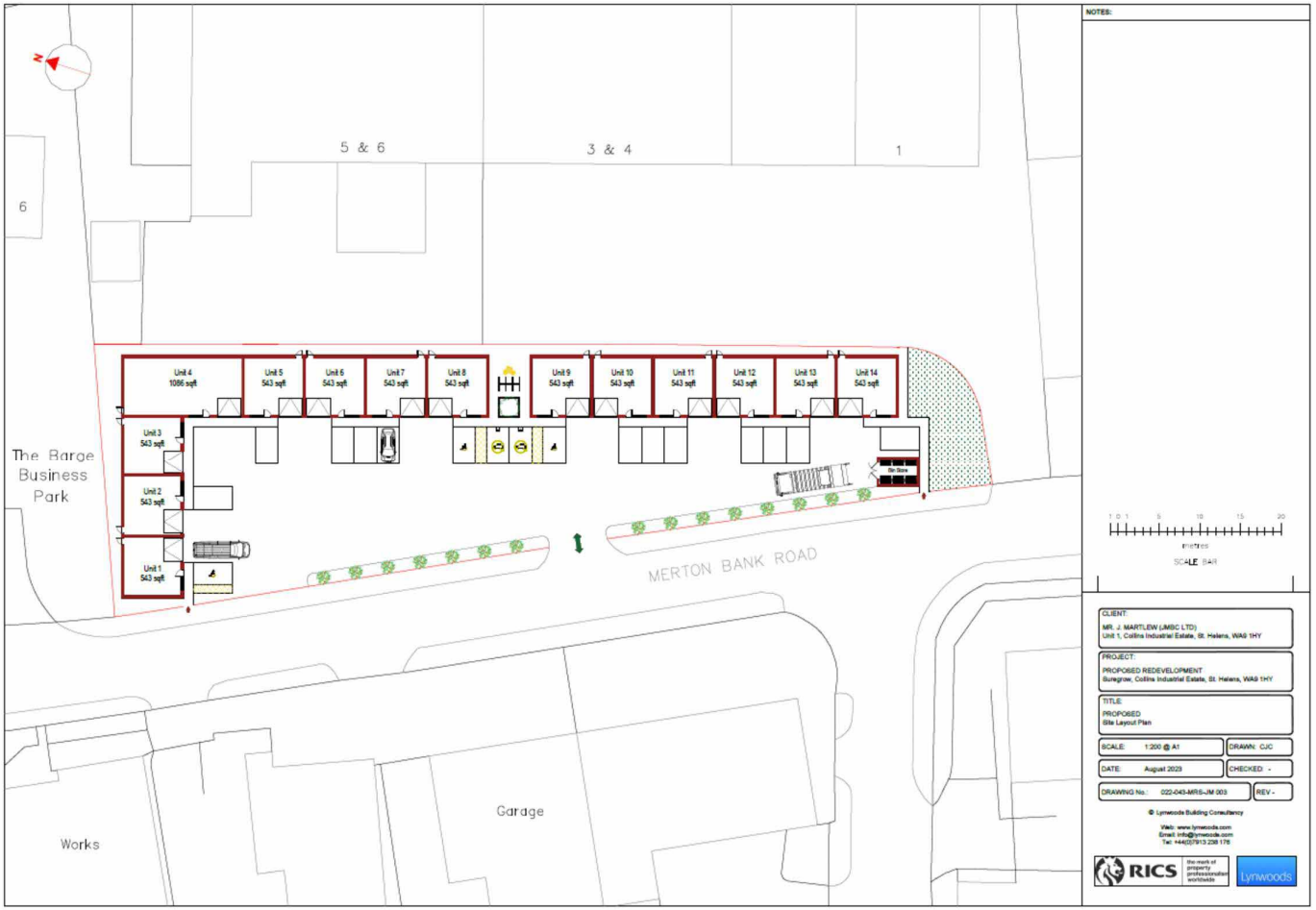

Table A3: Background Sound Levels

		Measured Sound Pressure Level, dB	
Start Date	Time	LAeq,15mins	LA90,15mins
24/11/2023	08:00	50.1	48.1
24/11/2023	08:15	49.9	47.9
24/11/2023	08:30	51.3	48
24/11/2023	08:45	50	48.8
24/11/2023	09:00	49.9	48.5
24/11/2023	09:15	49.8	48
24/11/2023	09:30	57.7	47.9
24/11/2023	09:45	50.7	48
24/11/2023	10:00	55.6	48.6
24/11/2023	10:15	49.6	48.3
24/11/2023	10:30	49.1	47.8
24/11/2023	10:45	52.9	48.1
24/11/2023	11:00	50.5	48.6
24/11/2023	11:15	49.4	47.9
24/11/2023	11:30	50.1	48.2
24/11/2023	11:45	49.8	48
24/11/2023	12:00	51.4	47.7
24/11/2023	12:15	49.9	47.6
24/11/2023	12:30	50.2	47.7
24/11/2023	12:45	50.4	48.4
24/11/2023	13:00	51.1	49
24/11/2023	13:15	50.1	48.2
24/11/2023	13:30	50.3	48.5
24/11/2023	13:45	50	48.1
24/11/2023	14:00	51.3	48.5

24/11/2023	14:15	50.7	48.2
24/11/2023	14:30	51.1	48.8
24/11/2023	14:45	51.4	48.8
24/11/2023	15:00	51.3	49
24/11/2023	15:15	51.5	48.6
24/11/2023	15:30	50.9	48
24/11/2023	15:45	54.6	48.1
24/11/2023	16:00	50.4	48.6
24/11/2023	16:15	50.2	48.5
24/11/2023	16:30	50.7	48.9
24/11/2023	16:45	51.1	49
24/11/2023	17:00	50.9	48.6
24/11/2023	17:15	51.3	48.4
24/11/2023	17:30	51.1	49
24/11/2023	17:45	50.6	48
24/11/2023	18:00	50.3	47.9
24/11/2023	18:15	49.9	47.8
24/11/2023	18:30	49.1	47.7
24/11/2023	18:45	50.1	48.5
24/11/2023	19:00	49.8	48
24/11/2023	19:15	49.2	46.9
24/11/2023	19:30	49.5	47
24/11/2023	19:45	48.7	47.1
24/11/2023	20:00	50.5	47.5
24/11/2023	20:15	49	46.5
24/11/2023	20:30	48.9	47.1
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24/11/2023	22:15	47.5	45.9
24/11/2023	22:30	47.1	45.6
24/11/2023	22:45	45	43.8
24/11/2023	23:00	45.9	44.7
24/11/2023	23:15	46.2	44.1
24/11/2023	23:30	46.3	44.2
24/11/2023	23:45	45.8	43.8
25/11/2023	00:00	46.4	44.8
25/11/2023	00:15	45.1	43.4
25/11/2023	00:30	44.3	42.7
25/11/2023	00:45	45.8	44.3
25/11/2023	01:00	46.7	45.1
25/11/2023	01:15	45	43.1
25/11/2023	01:30	44	41.3
25/11/2023	01:45	42.9	41.3
25/11/2023	02:00	44	42
25/11/2023	02:15	44.3	42
25/11/2023	02:30	43.7	41.6
25/11/2023	02:45	44.1	42.7
25/11/2023	03:00	45.1	42.7
25/11/2023	03:15	44	41.2
25/11/2023	03:30	46.7	44.2
25/11/2023	03:45	46.5	44.7
25/11/2023	04:00	49.4	47.5
25/11/2023	04:15	50.4	48.4
25/11/2023	04:30	53.7	50
25/11/2023	04:45	54.4	52.8
25/11/2023	05:00	51.6	48.7

25/11/2023	05:15	61.3	48.7
25/11/2023	05:30	50.4	48.2
25/11/2023	05:45	49.8	48.1
25/11/2023	06:00	49.2	47.3
25/11/2023	06:15	49.3	47
25/11/2023	06:30	51.1	46.7
25/11/2023	06:45	50.2	46.6
25/11/2023	07:00	49.8	46.1
25/11/2023	07:15	49	45.6
25/11/2023	07:30	46.5	43.7
25/11/2023	07:45	48.1	44.5
25/11/2023	08:00	47.7	44.3
25/11/2023	08:15	50.1	44.4
25/11/2023	08:30	47.5	45.2
25/11/2023	08:45	46	44.1
25/11/2023	09:00	47.3	44
25/11/2023	09:15	46.3	44.6
25/11/2023	09:30	46.1	43.8
25/11/2023	09:45	46	43.6
25/11/2023	10:00	45.9	43.8
25/11/2023	10:15	47	43.3
25/11/2023	10:30	48	43.7
25/11/2023	10:45	49.8	45
25/11/2023	11:00	46.8	43.5
25/11/2023	11:15	49.6	43.2
25/11/2023	11:30	51	43.9
25/11/2023	11:45	49.8	43.3
25/11/2023	12:00	52.2	44.5
25/11/2023	12:15	47.8	43.3
25/11/2023	12:30	53.1	43.9

25/11/2023	12:45	52	43.7
25/11/2023	13:00	48.4	43.2
25/11/2023	13:15	48.7	43.4
25/11/2023	13:30	49.5	43.7
25/11/2023	13:45	49.2	42.6
25/11/2023	14:00	44.5	41.9
25/11/2023	14:15	45.7	43.3
25/11/2023	14:30	55.8	42.9
25/11/2023	14:45	51.2	44.4
25/11/2023	15:00	51.6	45.3
25/11/2023	15:15	48.2	44.2
25/11/2023	15:30	50.7	44.3
25/11/2023	15:45	51.9	45.1
25/11/2023	16:00	47.7	44
25/11/2023	16:15	49.1	43.1
25/11/2023	16:30	47	43.6
25/11/2023	16:45	52.2	45.2
25/11/2023	17:00	50.1	44.3
25/11/2023	17:15	49.2	44.5
25/11/2023	17:30	56	44.2
25/11/2023	17:45	48.6	44.9
25/11/2023	18:00	50	45.1
25/11/2023	18:15	49.7	45.3
25/11/2023	18:30	50.1	44.9
25/11/2023	18:45	53.6	47.2
25/11/2023	19:00	49.2	46.3
25/11/2023	19:15	50	48
25/11/2023	19:30	50.2	47.1
25/11/2023	19:45	51.2	46.2
25/11/2023	20:00	57.1	44.9

25/11/2023	20:15	49.6	43.5
25/11/2023	20:30	49.2	44.5
25/11/2023	20:45	58.9	46.1
25/11/2023	21:00	52.7	44.7
25/11/2023	21:15	53.2	45.6
25/11/2023	21:30	49.8	44.1
25/11/2023	21:45	48.2	42.2
25/11/2023	22:00	44.3	41.5
25/11/2023	22:15	43.6	41.4
25/11/2023	22:30	44.3	42.1
25/11/2023	22:45	44.4	42.6
25/11/2023	23:00	46.6	42.9
25/11/2023	23:15	44.7	42.3
25/11/2023	23:30	45	42
25/11/2023	23:45	44.7	41.9
26/11/2023	00:00	44	41.8
26/11/2023	00:15	43.8	40.3
26/11/2023	00:30	40.2	38.7
26/11/2023	00:45	41.2	38.9
26/11/2023	01:00	43.2	39.6
26/11/2023	01:15	52.8	40.1
26/11/2023	01:30	40.9	38.9
26/11/2023	01:45	40.1	38.4
26/11/2023	02:00	40	38.4
26/11/2023	02:15	39.9	38.3
26/11/2023	02:30	39.5	38
26/11/2023	02:45	40.3	38.3
26/11/2023	03:00	42.7	39
26/11/2023	03:15	43.1	39.2
26/11/2023	03:30	40.4	38.6

26/11/2023	03:45	43.8	40.8
26/11/2023	04:00	46	41.5
26/11/2023	04:15	48.7	44.2
26/11/2023	04:30	52.2	48.7
26/11/2023	04:45	51.6	49.7
26/11/2023	05:00	49.7	47.6
26/11/2023	05:15	47.9	45.3
26/11/2023	05:30	50	46.4
26/11/2023	05:45	54.1	44.6
26/11/2023	06:00	52	40.3
26/11/2023	06:15	44.9	42.6
26/11/2023	06:30	56.2	41.3
26/11/2023	06:45	46.4	41.2
26/11/2023	07:00	51.6	41.8
26/11/2023	07:15	50.1	40.2
26/11/2023	07:30	46.8	43.2
26/11/2023	07:45	47.5	42.3
26/11/2023	08:00	51.1	41.9
26/11/2023	08:15	44.3	41.2
26/11/2023	08:30	48.6	42.2
26/11/2023	08:45	46.1	41.3
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26/11/2023	09:15	52.4	43.4
26/11/2023	09:30	44.8	42.4
26/11/2023	09:45	45.7	43
26/11/2023	10:00	49.3	43.6
26/11/2023	10:15	50.2	45.5
26/11/2023	10:30	51	44.3
26/11/2023	10:45	46.1	44.1
26/11/2023	11:00	53	43.4

26/11/2023	11:15	49.1	42.4
26/11/2023	11:30	52.9	43
26/11/2023	11:45	53.6	43.6
26/11/2023	12:00	51	45.5
26/11/2023	12:15	51.3	44.3
26/11/2023	12:30	51.2	42.4
26/11/2023	12:45	52.3	43
26/11/2023	13:00	53	43.6
26/11/2023	13:15	55	45.5
26/11/2023	13:30	54	44.3
26/11/2023	13:45	53.8	44.1
26/11/2023	14:00	54.6	43.4
26/11/2023	14:15	57.1	42.4
26/11/2023	14:30	54.7	43
26/11/2023	14:45	55	43.6
26/11/2023	15:00	56.5	45.5
26/11/2023	15:15	54.3	42.4
26/11/2023	15:30	53.9	43
26/11/2023	15:45	54.6	43.6
26/11/2023	16:00	53.8	45.5
26/11/2023	16:15	58	44.3
26/11/2023	16:30	54.1	44.1
26/11/2023	16:45	52	43.4
26/11/2023	17:00	54.1	42.4
26/11/2023	17:15	56.4	43
26/11/2023	17:30	53.4	43.6
26/11/2023	17:45	53.2	45.5
26/11/2023	18:00	55.8	44
26/11/2023	18:15	55.1	48
26/11/2023	18:30	55.6	53

26/11/2023	18:45	53.3	51
26/11/2023	19:00	51	48.9
26/11/2023	19:15	49	46.3
26/11/2023	19:30	54.2	44.1
26/11/2023	19:45	48.6	44.4
26/11/2023	20:00	49.1	45.6
26/11/2023	20:15	49.7	45.4
26/11/2023	20:30	49.2	46
26/11/2023	20:45	46	43.6
26/11/2023	21:00	51.4	45.4
26/11/2023	21:15	48.1	44.6
26/11/2023	21:30	46.1	41.7
26/11/2023	21:45	43.1	41
26/11/2023	22:00	44.4	41.2
26/11/2023	22:15	45.2	41.8
26/11/2023	22:30	44.4	39.8
26/11/2023	22:45	42.9	40.3
26/11/2023	23:00	46.4	42.8
26/11/2023	23:15	43.5	38.5
26/11/2023	23:30	42.5	38.8
26/11/2023	23:45	43.1	40
27/11/2023	00:00	50.3	43.6
27/11/2023	00:15	50.8	46.7
27/11/2023	00:30	47.8	44.5
27/11/2023	00:45	47.5	44.9
27/11/2023	01:00	50.5	48.6
27/11/2023	01:15	46.7	43.1
27/11/2023	01:30	45.2	40.7
27/11/2023	01:45	44.7	40.3
27/11/2023	02:00	42.5	38.9

27/11/2023	02:15	43.7	39.5
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27/11/2023	03:00	43.2	38.6
27/11/2023	03:15	42.4	39.1
27/11/2023	03:30	42.9	39.8
27/11/2023	03:45	44.7	42.2
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27/11/2023	05:00	50.7	48.3
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27/11/2023	05:45	51.9	45.1
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27/11/2023	06:15	47.6	45
27/11/2023	06:30	47.9	45.4
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27/11/2023	07:15	50	46.4
27/11/2023	07:30	48.5	47.1
27/11/2023	07:45	50	47.5
27/11/2023	08:00	47.9	45.3
27/11/2023	08:15	47.2	45.3
27/11/2023	08:30	51.4	45.5
27/11/2023	08:45	48.5	44.9
27/11/2023	09:00	50.9	45.3