

ACOUSTIC SOLUTIONS

Environmental Assessments

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NOISE IMPACT ASSESSMENT FOR PROPOSED DEVELOPMENT:

74 Heene Road, Worthing BN11 3RG

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1.0 INTRODUCTION

1.1

Acoustic Solutions has been commissioned to undertake a noise impact assessment for the proposed development: refurbishment of hot food take away with additional extraction system with new ducting riser at the rear of the premises at 74 Heene Road, Worthing BN11 3RG. 74 Heene Road is currently the site of Worthing Fisheries. An extraction system serving this business is currently in situ. It is proposed that a second new extraction system be installed to serve a fried chicken takeaway, also at the premises.

1.2

The objectives for the noise impact assessment were as follows:

- Establish the daytime and evening residual and background sound levels at the application site and its surrounding environs;
- Establish the specific sound level of the likely noise sources associated with this application, specifically a kitchen extraction system consisting of .

1.3

This report details the methodology and results of the assessment. It has been prepared to accompany an application for planning permission that is to be submitted to Adur and Worthing Councils for the proposed development of the application site.

1.4

This report has been prepared for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties referring to the report should consult the client and/or Acoustic Solutions as to the extent to which the findings may be appropriate for their use.

1.5

A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

2.0 NOISE IMPACT ASSESSMENT CRITERIA

2.1

In terms of noise impact assessment criteria, Paragraph 170e of the National Planning Policy Framework (NPPF) 2024 states that planning policies and decisions should contribute to and enhance the natural local environment by *‘preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.’*

2.2

Planning Practice Guidance specifically dealing with noise was uploaded to the Government’s Planning Portal in March 2024 as an accompaniment to the National Planning Policy Framework. This guidance is summarised herein.

2.3

The guidance states that noise needs to be considered when new developments may create additional noise. Whilst noise can override other planning concerns, neither the Noise Policy Statement for England nor the National Planning Policy Framework (which reflects the Noise Policy Statement for England) expects noise to be considered in isolation, separately from the economic, social and other environmental dimensions of proposed development.

2.4

In order to determine noise impact, local planning authorities’ plan-making and decision taking 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.

2.5

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 is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.

2.6 Observed Effect Levels:

- No Observed Adverse Effect Level (NOAEL) – This is the level of noise exposure below which no effect at all on health or quality of life can be detected;
- Lowest Observed Adverse Effect Level (LOAEL) – This is the level of noise exposure above which adverse effects on health and quality of life can be detected, and;
- Significant Observed Adverse Effect Level (SOAEL) – This is the level of noise exposure above which significant adverse effects on health and quality of life occur.

2.7

At the lowest extreme, when noise is not noticeable, there is by definition no effect. As the noise exposure increases, it will cross the 'no observed' effect level as it becomes noticeable. However, the noise has no adverse effect so long as the exposure is such that it does not cause any change in behaviour or attitude. The noise can slightly affect the acoustic character of an area but not to the extent there is a perceived change in quality of life. If the noise exposure is at this level no specific measures are required to manage the acoustic environment.

2.8

As the exposure increases further, it crosses the lowest observed adverse effect level boundary above which the noise starts to cause small changes in behaviour and attitude, for example, having to turn up the volume on the television or needing to speak more loudly to be heard. The noise therefore starts to have an adverse effect and consideration needs to be given to mitigating and minimising those effects (taking account of the economic and social benefits being derived from the activity causing the noise).

2.9

Increasing noise exposure will at some point cause the significant observed adverse effect level boundary to be crossed. Above this level the noise causes a material change in behaviour such as keeping windows closed for most of the time or avoiding certain activities during periods when the noise is present. If the exposure is above this level the planning process should be used to avoid this effect occurring, by use of appropriate mitigation such as by altering the design and layout. Such decisions must be made taking account of the economic and social benefit of the activity causing the noise, but it is undesirable for such exposure to be caused.

2.10

At the highest extreme, noise exposure would cause extensive and sustained changes in behaviour without an ability to mitigate the effect of noise. The impacts on health and quality of life are such that regardless of the benefits of the activity causing the noise, this situation should be prevented from occurring.

2.11

Tables 2.1 and 2.1B summarises noise exposure hierarchy, based on likely average response.

Table 2.1A Guidelines – Noise Exposure Hierarchy

Noise Source	Assessment Location	LOAEL	SOAEL	Time
	Outdoor living space	55 dB $L_{Aeq, 1 \text{ hour}}$ (A)	56-60 dB $L_{Aeq, 1 \text{ hour}}$ (A)	Day (07:00-23:00)
	Façade	50 dB $L_{Aeq, 1 \text{ hour}}$ (A)	72 dB $L_{Aeq, 16 \text{ hour}}$ (A)	Day (07:00-23:00)
General environmental noise: Road/Rail	Façade	45 dB $L_{Aeq, 8 \text{ hour}}$ (B)	67 dB $L_{Aeq, 8 \text{ hour}}$ (A)	Night (23:00-07:00)
	Habitable Room	30 dB $L_{Aeq, 8 \text{ hour}}$ (B)	40 dB $L_{Aeq, 8 \text{ hour}}$ (A)	Night (23:00-07:00)
	Habitable Room	35 dB $L_{Aeq, 16 \text{ hour}}$ (A)	45 dB $L_{Aeq, 16 \text{ hour}}$ (A)	Day (07:00-23:00)

A: World Health Organisation: Guideline for Community Noise (1999)

B: World Health Organisation: Noise Guidance for Europe (2009)

Table 2.1B NOAEL, LOAEL and SOAEL Values

SPL, dB	≤ 40	41-45	46-50	51-55	56-60	≥ 60
Day	NOAEL	NOAEL	NOAEL	LOAEL	SOAEL	SOAEL+
Evening	NOAEL	NOAEL	LOAEL	SOAEL	SOAEL	SOAEL+
Night	NOAEL	LOAEL	SOAEL	SOAEL	SOAEL	SOAEL+

2.12

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;
- 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 (i.e. whether or not the noise contains particular high or low frequency content) and the general character of the noise (i.e. whether or not the noise contains particular tonal characteristics or other particular features);
- The local acoustic character of the area.

2.13

In addition, further useful contextual guidance is provided in:

- British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' (BS 8233);
- World Health Organisation (WHO) Guidelines for Community Noise (1999);
- ProPG: Planning & Noise, Professional Practice Guidance on Planning & Noise: New Residential Development, 2017.

2.14

British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' sets indoor ambient noise levels from residential dwellings (see table below).

Table 2.2 – Indoor Ambient Noise Levels in Dwellings (BS 8233): 2014

Action	Location	Good Indoor Ambient Noise Levels, dB	
Resting	Living Room / Bedroom	L _{Aeq} (07:00-23:00)	35
Sleeping	Bedroom	L _{Aeq} (23:00-07:00)	30
Sleeping	Bedroom	L _{AMax} (23:00-07:00)	45
Action	Location	Good Outdoor Ambient Noise Levels, dB	
Resting	External Amenity	L _{Aeq} (07:00-23:00)	50-55

2.15

With regard to sound attenuation through the building envelope, the 'weak points' in the building façade are generally considered to be the windows. The worked example (G.1) at Annex G of BS 8233 suggests that a partially opened window would provide sound attenuation of approximately 15 dB *R_w*. The Standard also suggests that “..*standard insulating glass units have an insulation value of approximately 30 dB *R_w**” when closed.

2.16

With respect to noise affecting external areas, i.e. gardens, BS 8233 states that *“.. it is desirable that the steady noise level does not exceed 50 dB LAeq, and 55 dB LAeq should be regarded as the upper limit”*.

2.17

The World Health Organisation's Guidelines for Community Noise (1999) sets indoor ambient noise levels from residential dwellings (see table below).

Table 2.3 – Indoor Ambient Noise Levels in Dwellings (WHO 1999)

Action	Location	Good Indoor Ambient Noise Levels, dB	
Resting	Living Room / Bedroom	L _{Aeq} (07:00-23:00)	35
Sleeping	Bedroom	L _{Aeq} (23:00-07:00)	30
Sleeping	Bedroom	L _{AMax} (23:00-07:00)	45
Action	Location	Good Outdoor Ambient Noise Levels, dB	
Resting	External Amenity	L _{Aeq} (07:00-23:00)	50-55

2.18

ProPG: Planning & Noise, Professional Practice Guidance on Planning & Noise: New Residential Development, 2017 was developed by the Institute of Acoustics (IOA), the Chartered Institute of Environmental Health (CIEH) and the Association of Noise Consultants (ANC), the ProPG provides practitioners with guidance on a recommended approach to the management of noise within the planning system in England. The document provides guidance which encourages better acoustic design for new residential development and aims to protect people from the harmful effects of noise.

ProPG takes a two stage approach.

Stage 1: Initial Site Noise Risk Assessment;

Stage 2:

- Element 1 – Good Acoustic Design Process;
- Element 2 – Internal Noise Level Guidelines;
- Element 3 – External Amenity Area Noise Assessment;

- Element 4 – Assessment of Other Relevant Issues (compliance with relevant national and local policy; the magnitude and extent of compliance with ProPG; likely occupants of the development; acoustic design versus unintended adverse consequences; acoustic design versus wider planning objectives).

3.0 BASELINE NOISE SURVEY

3.1

The application site is 74 Heene Road, Worthing BN11 3RG. The proposal, (not yet submitted to Adur and Worthing Councils), is for refurbishment of hot food take away with additional extraction system with new ducting riser at the rear (east) of the premises. 74 Heene Road is currently the site of Worthing Fisheries. An extraction system serving this business is currently in situ. It is proposed that a second new extraction system be installed to serve a fried chicken takeaway, also at the premises.

It is proposed that extraction flue will emerge from the ground roof, and travel vertically where it will terminate 3 metre above the roof eaves. There is current a dwelling on the first storey, directly above the development site. It is thought that this represents the nearest noise-sensitive dwelling to the proposed extraction unit.

3.2

Although Adur and Worthing Councils has not yet commented upon the specific proposal, it has published guidelines in relation to extraction systems, which include noise-related comments:

Noise Data on the noise produced by the system as a whole should be provided including:

- *sound power levels or sound pressure levels at given distances (the assumptions to this calculation must be clearly stated);*
- *an octave band analysis of the noise produced by the system should also be provided, where possible; and*
- *hours of operation of the ventilation system (where this differs from the hours of opening).*
- *If the system produces internal sound levels above 70dB at the workstation, a workplace noise assessment should be conducted to ensure that compliance with occupational noise limits is met.*

Minimum Requirements for Noise Control For new premises or premises covered by planning conditions restricting the impact of noise the system shall be designed to prevent an acoustic impact on the external environment and therefore harm to the amenity, as well as ensuring that noise exposure of kitchen staff does not constitute an occupational noise problem (see Control of Noise at Work Regulations 2005). For existing premises not covered by planning conditions restricting the impact of noise, the system shall be designed to avoid statutory nuisance and shall comply with the principles of Best Practicable Means. To achieve these objectives the noise control system shall include:

- control of noise at source to the greatest extent possible; and*
- control of noise to the environment by taking acoustic considerations into account within duct, grille and termination design.*

The control system should meet the requirements laid down in BS4142: 2014 “Method for Rating and assessing industrial and commercial sound”. Reference should also be made to “Planning Noise Advice Document: Sussex” (available at <https://www.adurworthing.gov.uk/noise/planning/>). Where in-line attenuators are used they shall be constructed so that there is no grease impregnation into the acoustic media. A protective membrane shall be specified for this purpose or this will reduce the design performance of the attenuator. This should be taken into account when selection is made. It may be necessary to apply additional acoustic controls such as in line silencer or splitter attenuator after grease removal stages. Care should be taken to ensure that all such elements are capable of being accessed for cleansing purposes.

This being the case, an assessment of the system’s likely noise impact has been undertaken, using BS4142+A1: 2019 methodology. In order to establish the daytime and evening, background noise levels at the application site and its surrounding environs a baseline noise survey was undertaken on Saturday 10 January 2026 between 11:00 and 21:30: the premises’ stated opening hours.

3.3 Site Description

74 Heene Road is part of a row of terraced two-storey properties that run approximately north-south along Heene Road in Worthing. At ground floor level, all the property is commercial in nature. A domestic dwelling is located above the development site. As such, it can be said that the development site is mixed domestic/commercial in character. Table 3.1 summarises the nearest identified noise-sensitive premises to the proposed extraction unit.

Table 3.1 Identified Noise Sensitive Premises

Noise Sensitive Premises	Distance at its closest point, m			
	North	South	East	West
First storey dwellings above 74 Heene Road (eastern façade)	N/A	N/A	4	N/A

3.4

For the purpose of the assessment, one noise monitoring position, MP1 was adopted in free field environments at over 1.5 metres above ground and over 3 metres from any vertical reflective surface (see Appendix 2):

- MP1. Car park at the rear yard of 74 Heene Road's, rear, eastern façade. The monitoring position was selected to assess typical daytime and evening 'baseline' noise levels at east facing window serving first storey dwelling above 74 Heene Road. The microphone was tripod-mounted.

3.5

A series of hourly 15-minute noise measurements were undertaken using a Type 1 integrating sound level meter (Appendix 3). Calibration was verified immediately before the commencement of the measurement sessions and again at the end. Weather conditions throughout the survey were dry and clear with a maximum southerly wind speed of 2.1 metres per second: appropriate for monitoring. Measurements consisted of A-weighted parameters: L_{Aeq} , L_{A90} , and L_{AMax} .

3.6 MP1

Daytime and evening sound levels were dominated by noise from 2x wall-mounted condensers unit located at the rear of, and serving Worthing Fisheries at 74 Heene Road. The thermostat operated unit activated regularly at intermittent periods typically lasting 4 minutes throughout the entire assessment period. In the intervals between the unit's activation, sound levels were dominated by muted noise from traffic using Heene Road and the car park at Bowser's Court.

Table 3.2 summarises measured daytime and evening noise. Residual and Background Noise Levels at MP1 (L_{Aeq} , and L_{A90} , and their averages) and the Maximum Sound Levels (L_{Amax} and its maximum measured value) was measured.

Table 3.2 – MP1: Baseline Noise Measurement Data, Daytime & Evening Sound Levels

Measurement Time	Residual Noise Level, dB, $L_{Aeq, 15 \text{ min}}$	Background Noise Level, dB $L_{A90, 15 \text{ min}}$	Measured Noise Level, dB $L_{A\text{Max}, 15 \text{ min}}$
07:00	N/A	N/A	N/A
08:00	N/A	N/A	N/A
09:00	N/A	N/A	N/A
10:00	N/A	N/A	N/A
11:00	57.0	52.8	66.7
12:00	56.8	52.9	65.1
13:00	56.6	53.0	64.9
14:00	56.9	52.9	65.0
15:00	56.5	52.8	65.4
16:00	57.0	52.9	64.6
17:00	56.8	52.8	65.7
18:00	56.9	52.8	64.3
Daytime Average/Max	57	53	67
19:00	56.6	53.4	67.6
20:00	56.0	52.5	66.0
21:00	56.5	52.4	65.4
22:00	N/A	N/A	N/A
Daytime/Evening Average/Max	57	53	68
Evening Average/Max	56	53	68

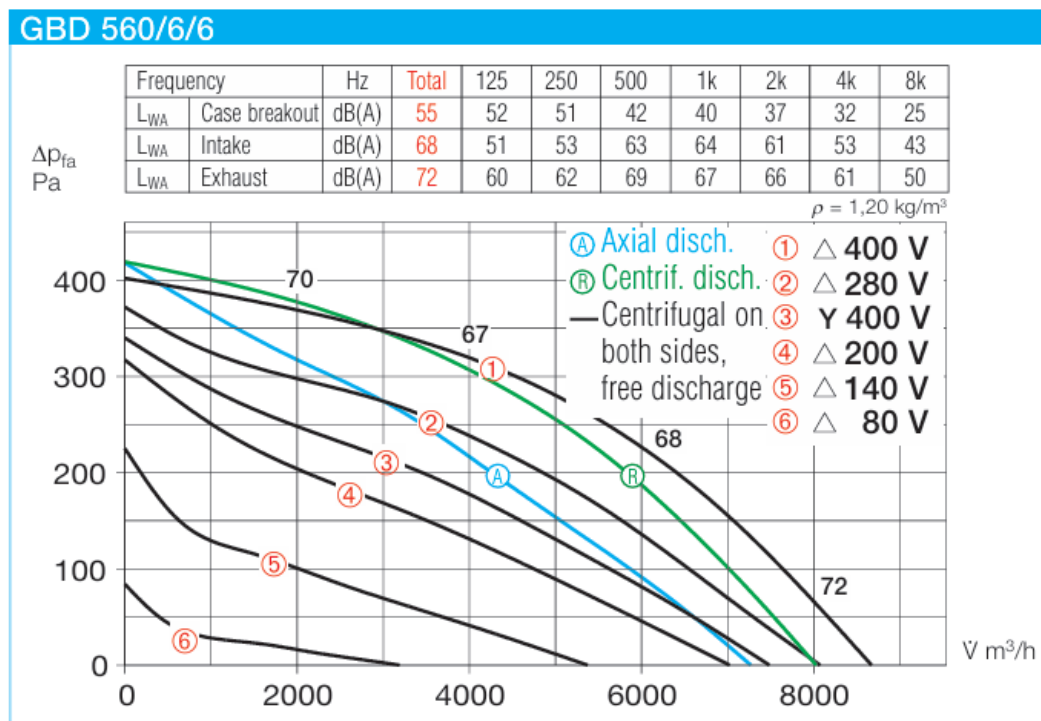
4.0 DISCUSSION

4.1 External Impact

4.1.1 BS4142+A1: 2019 Noise Impact Assessment

It is proposed that the kitchen extraction fan model will be 1x Helios 560mm Gigabox centrifugal fan. The data shows that, at 1 metre, the intake and the flue outlet sound pressure level are 68 and 72 dB, L_{Aeq} , respectively, and that at 1 metre, the case breakout sound pressure level is 55 dB, L_{Aeq} . The combined outlet and breakout sound level at 1 metre is 72 dB. Figure 4.1 summarises the noise output associated with this extraction system. All values are quoted at 1 metre in free-field (no reflections) conditions. Given the distance between the extraction flue and the window, no distance attenuation correction has been applied. Quoted noise levels associated with case break-out and intake will be subjected to a +3 dB correction to account for the likely reflections that will arise, given the flue's intended location. Therefore, at 1 metre, it is predicted that the extraction system's sound power level will be 75 dB.

Figure 4.1 Helios 560mm Gigabox centrifugal fan, noise data



4.1.1.1

Table 4.1 summarises the predicted daytime/evening noise impact of the proposed distance-attenuated kitchen extraction unit at the identified noise-sensitive dwelling.

4.1.1.2 Distance Attenuation

A distance calculation, Equation 4.1, below is used to predict the extraction system's noise impact outside the east-facing window at the nearest first floor domestic dwelling. Table 4.2 summarises the system's distance-attenuated noise impact outside this window.

Equation 4.1. Sound Attenuation by Distance

$$SPL2 = SWL - 20 \log r$$

Where:

SWL Sound Pressure Level at 1m

R Distance between noise source and receptor

Table 4.1 Distance attenuated prediction

Address	Quoted Noise Level, dB	Distance from Source to Noise-Sensitive Dwelling, m	Distance-Attenuated Noise Level, dB	Attenuation Value, dB
First Storey Dwelling above 74 Heene Road	75	4	63	12

Table 4.2 Predicted noise impact at first storey dwelling above 74 Heene Road, daytime/evening

Location	Background Noise, dB, LA90,15	Distance-corrected Specific Noise Level, dB, LAeq (+3 dB façade correction)	Tonal Penalty (3-6)	Impulsive Penalty (3-9)	Intermittency Penalty (0-3)	Assessment Level, dB	Comments
First floor dwelling above 74 Heene Road	53	63	0	0	0	10	Significant Adverse Impact

4.1.1.2 External Impacts

The daytime/evening BS4142+A1 noise impact assessment at the dwelling above first storey dwellings above 74 Heene Road has yielded a Rating of +10 dB. This suggests that the adverse impact at the dwellings' external amenity would be significant.

5.0 RECOMMENDATIONS

5.1 Extraction System Attenuation

An Acoustica CP03-0560-1D in-line attenuator should be installed internally at the nearest possible downstream point from the system's extraction fan, within the fabric of 74 Heene Road. The extraction fan should also be located internally within the fabric of 74 Heene Road. Tables 5.1 and 5.2 summarises the quoted insertion loss provided by this attenuator.

Table 5.1. Acoustica CP03-0560-1D in-line attenuator Insertion-Loss Values

INSERTION LOSS (dB) - CENTRE BAND FREQUENCY

PRODUCT CODE	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
CP03-C*-0560-1D	2	4	7	14	14	9	9	7
CP03-C*-0560-2D	3	6	10	19	20	14	12	10
CP03-C*P-0560-1D	3	7	9	18	24	24	20	15
CP03-C*P-0560-2D	4	9	17	27	29	28	23	23

Insertion loss data is derived from continual testing to BS4718 and other standards in independent UKAS certified laboratories, which includes where appropriate, re-generated or self noise testing in both forward and reverse flow conditions. If you request system analysis from our technicians all predictions will be assessed using the relevant certified insertion loss data together with relevant dynamic corrections.

Table 5.2. Acoustica CP03-0560-1D in-line attenuator Insertion-Loss Values

Frequency, Hz	Fan SPL, dB
63	2
125	4
250	7
500	14
1000	14
2000	9
4000	9
8000	7
Total	11

Table 5.2 summarises the predicted external noise levels, as influenced by the recommended attenuator; the overall A-weighted insertion loss being **11 dB**. It is calculated that, at 1 metre, the attenuated, the combined flue breakout and exhaust noise levels will result in an external noise level contribution of **64 dB**. A -12 dB distance attenuation factor (see Table 4.1) will reduce this level to **52 dB**, outside the window of the nearest dwelling.

Table 5.2 Attenuated noise level @ 1 metre

Hz	Flue Breakout +3 dB reflection correction, dB	Attenuation, R, dB	Attenuated External SPL, dB +3 dB Reflection Correction
63	N/A	2	N/A
125	52	4	N/A
250	51	7	47
500	42	14	31
1000	40	14	29
2000	37	9	31
Total	58	11	47
Hz	Exhaust, dB	Attenuation, R, dB	Attenuated External SPL, dB +3 dB Reflection Correction
63	N/A	2	N/A
125	60	4	N/A
250	62	7	58
500	69	14	58
1000	67	14	56
2000	66	9	60
Total	75	11	64
Combined Attenuated Breakout and Exhaust SPL, dB			64

5.3 External Impact

The sound pressure level from the attenuated extraction system can be assessed. Table 5.4 summarises the predicted noise level of the attenuated extraction unit outside the first and second dwellings at the rear of 74 Heene Road.

Table 5.4 Predicted distance-attenuated sound pressure levels outside floor dwelling above 74 Heene Road

Location	Background Noise, dB, $L_{A90,15}$	Distance and in-line attenuator-corrected Specific Noise Level, dB, L_{Aeq}	Tonal Penalty (3-6)	Impulsive Penalty (3-9)	Intermittency Penalty (0-3)	Assessment Level, dB	Comments
First floor dwelling above 74 Heene Road	53	52	0	0	0	-1	No Adverse Impact

6.0 CONCLUSIONS

6.1

A daytime/evening noise impact assessment has been conducted at 74 Heene Road, Worthing BN11 3RG .

6.2

It has been recommended that kitchen extraction at this premises be undertaken through the deployment of 1x Helios 560mm Gigabox centrifugal fan. This fan should be located internally within the structure of 74 Heene Road.

6.3

The external extraction ducting should be affixed to the rear, eastern façade using anti-vibrational mounts.

6.4

Assuming that kitchen extraction will be provided by 1x Helios 560mm Gigabox centrifugal fan, it is predicted that – unattenuated - noise from the extraction unit will have a significant adverse noise impact upon the internal and external amenity of identified nearby noise-sensitive dwellings.

6.5

This report therefore recommends the introduction of an Acoustica CP03-0560-1D in-line attenuator . This attenuator should be located as close downstream from the extraction fan as possible; preferably internally, within the structure of 74 Heene Road.

6.6

Assuming the introduction of the Acoustica CP03-0560-1D in-line attenuator, it is predicted that noise from the extraction unit will have no adverse noise impact upon the internal or external amenity of identified nearby noise-sensitive dwellings.

Appendix 1

Glossary of Acoustic Terms

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 μPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$$L_p = 20 \log_{10}(p/p_0)$$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 μPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The A-weighted 'equivalent continuous noise level' which is an average of the total sound energy measured over a specified period of time. In other words, L_{Aeq} is the level if a continuous noise which has the same total (A-weighted) energy as the real fluctuating noise, measured over the same time period. L_{Aeq} is increasingly being used as the preferred parameter for all forms of environmental noise.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T . L_{A90} is typically taken as representative of background noise.

LA max

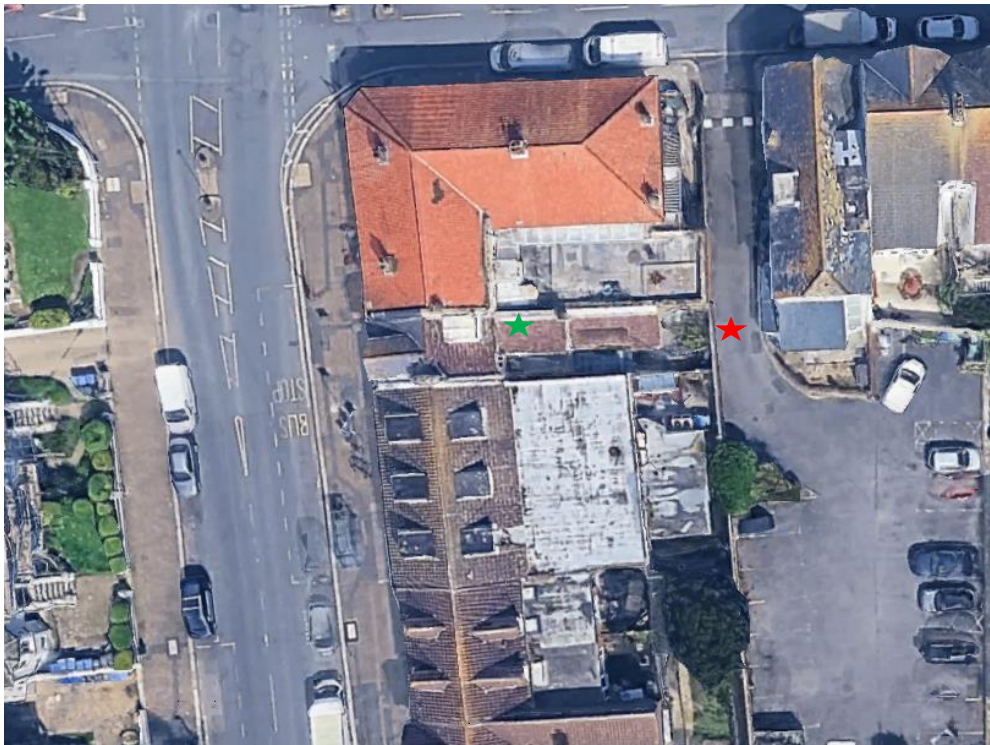
The maximum A-weighted noise level recorded during the measurement period.

Hz

The unit of frequency. The number of cycles (in the context of acoustics, the number of complete sound waves generated) per second.

Appendix 2

Location Plan, Noise Monitoring Positions and Identified Noise-Sensitive Dwellings



MP1: Rear (southern façade) of 74 Heene Road

Proposed Extraction Flue

Appendix 3

Equipment Used

Noise measurements were undertaken using a precision grade sound level meter:

Norsonic Nor145 Model integrating sound level meter.

Serial Number 14529307

Certificate Number U35939/U35940

Last Laboratory Calibrated 17/10/24

B & K 4230 Model calibrator

Serial Number 724157

Last Laboratory Calibrated 13/2/25

The Sound Level Meter was calibrated before and after both measurement periods, with no significant change in calibration. All calibrations took place at the measurement position.

The SLM met the requirements of BS EN 60651: 1994 and BS EN 60804: 2001 IEC 60804: 2000. It was capable of simultaneously measuring Leq and Ln values. Batteries for the SLM and calibrator were checked prior to all measurements.

Appendix 4

References

Helios Catalogue (2025) [Online]. Available at: [Catalogues, brochures and price lists to download - Helios Ventilatoren](#) [Accessed 16 January 2026]