



REPORT
NOISE IMPACT ASSESSMENT

SITE ADDRESS
THE OLD BANK, 1 CHURTON STREET, LONDON SW1V 2JX



REFERENCE
HA/AE173/V1

HEALTHY ABODE ACOUSTICS
BUILDING ACOUSTICIANS & ENVIRONMENTAL NOISE CONSULTANTS

Our Ref HA/AE173/V1
Site Address The Old Bank, 1 Churton Street, London SW1V 2JX
For Ambia Salam
Client Address 1 Churton Street Limited
Date of Report 27 April 2022
Site Acoustician(s) & Author(s) Mr Sam Toone *BSc(Hons) IoAStudent* & Miss Josie Nixon *MSc BA (Hons) MIOA*
Checked by Mr Stuart J G Nixon *MSc BSc (Hons) MIOA MCIEH*



Healthy Abode Ltd
Company No. 07429355 (England & Wales)
Office Address: Healthy Abode, Office F9, Allen House Business Centre, The Maltings, Station Road,
Sawbridgeworth, Essex CM21 9JX
Registered Business Address: Abacus House. 68a North Street, Romford, London, RM1 1DA
E-mail: info@HA-acoustics.co.uk
Website: www.HA-acoustics.co.uk
Telephone: (Chelmsford) 01245 206 250

This report has been prepared by Healthy Abode Limited t/a HA Acoustics with all reasonable expertise, care and diligence. The survey and report has been undertaken in accordance with accepted acoustic consultancy principles, it takes account of the services and terms and conditions agreed verbally and in writing between HA Acoustics and our client. Any information provided by third parties and referenced is considered to have undergone suitably thorough third-party checks to ensure accuracy. We can accept no liability for errors with a third-party data. This report is confidential to our client and therefore HA Acoustics accepts no responsibility whatsoever to third parties unless formally agreed in writing by HA Acoustics. Any such party relies upon the report at their own risk.

EXECUTIVE SUMMARY

- 1 Churton Street Limited instructed Healthy Abode Ltd t/a as HA Acoustics to undertake a noise impact assessment for the proposed installation of a kitchen extract system at 1 Churton Street, London SW1V 2JX.
- HA Acoustics has undertaken an environmental noise survey at the site in order to determine prevailing background noise levels that are representative of the nearest noise sensitive receptors (NSR). The nearest NSR to the proposed kitchen extract is the front façade of NSR1 ‘George Eliot House’; a residential development located approximately 9 meters North West from the kitchen duct terminus. NSR2 is another residential development located approximately 33 meters south with the front façade facing the fan casing and exhaust. NSR3 is the third residential development that is approximately 26 meters south-east from the fan casing where the front façade does not look over fan casing nor exhaust. To the north of 1 Churton Street is Vauxhall Bridge Road with offices directly to the east.
- A baseline noise survey and assessment has been undertaken in line with the guidance contained in BS 4142: 2014 +A1: 2019, measurements being taken over continuous 15-minute periods.
- The unattended survey was conducted on Wednesday 6th April 2022 – Thursday 7th April 2022, at a fixed monitoring point, located at the rear of the site. The operation of the mechanical plant shall be as required, 08:00 – 22:00 hours Monday to Sunday.
- The lowest background noise level has been calculated at 48dB $L_{A90,15mins}$ for the operational period (08:00-22:00). For robustness, the noise criteria has been set 10 dB below the lowest background at $L_{Ar,Tr}$ in line with the local authority’s requirements.
- Noise calculations of the proposed plant have been undertaken using all available details and plans provided by the client and obtaining manufacturers’ specifications. The resultant sound pressure level has been calculated at the following NSRs:
 - **NSR1 38dB $L_{Ar, Tr}$**
 - **NSR2 30dB $L_{Ar, Tr}$**
 - **NSR3 24dB $L_{Ar, Tr}$**
- In accordance with BS 4142:2014 +A1: 2019 guidance, the noise impact from the operation of the kitchen extract **“is an indication of the specific sound source having no impact”** at the NSR.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	3
1. INTRODUCTION	5
2. SITE DESCRIPTION	6
3. ENVIRONMENTAL NOISE SURVEY METHODOLOGY	7
4. EXTERNAL NOISE EMISSION CRITERIA	9
5. NOISE SURVEY RESULTS	12
6. NOISE IMPACT ASSESSMENT	13
7. UNCERTAINTY	17
8. CONCLUSION	18

Appendices

Appendix A – Site Location and Monitoring Positions

Appendix B – Time History

Appendix C – Plant Manufacturer’s Specification

Appendix D – Acoustic Calculations

Appendix E – Architectural Drawings

1. INTRODUCTION

1.1. 1 Churton Street Limited instructed Healthy Abode Ltd t/a HA Acoustics to undertake a noise impact assessment at 1 Churton Street, London SW1V 2JX for submission as part of documentation to be provided to the Local Authority, Westminster City Council.

1.2. 1 Churton Street, London SW1V 2JX is proposing to install a new kitchen extract system at the rear of the premises to service the commercial property, the noise from which could have the potential to affect existing noise sensitive properties nearby.

1.3. The purposes of this report are:

- To determine prevailing environmental noise levels affecting surrounding properties due to nearby noise sources (e.g. road traffic, commercial plant etc.);
- Based on the above, to present noise emission limits in accordance with the requirements of BS 4142: 2014 +A1: 2019, and
- To undertake an assessment to demonstrate compliance with the Local Authority noise requirements.

2. SITE DESCRIPTION

- 2.1. 1 Churton Street, London SW1V 2JX (hereafter referred to as 'the site') is a multi-purpose development with a commercial premises at ground floor level, a residential premises proposed on the first floor, and an already existing residential on the second floor.
- 2.2. Residential premises are also located to the west on Vauxhall Bridge Road, and to the south on Churton Street. To the east are commercial units consisting of office blocks. Longmoore Gardens Playground is also situated to the south. Situated to the north is Vauxhall Bridge Road.
- 2.3. The nearest noise sensitive receptor (NSR) is noted to be the front façade of 169A George Eliot House with a direct line of sight to the roof of 1 Churton Street where the duct is proposed to terminate. It can be confidently assumed that if the noise impact assessment indicates that the specific sound source has a low impact at this premises then it can be safely assumed it will be met at other properties of equal distance and/or those further away.
- 2.4. NSR2 is another residential development located approximately 33 meters south with the front façade facing the fan casing and exhaust. NSR3 is the third residential development that is approximately 26 meters south-east from the fan casing where the front façade does not look over fan casing nor exhaust.
- 2.5. At the time of installation and collection of the monitoring equipment, the dominant noise sources emanated from road traffic and children playing in Longmoore Gardens Playground. These noise sources are considered normal to the site location. No significant abnormal noise sources were identifiable. It is considered that the measured noise levels are reasonable given the location of the measurement position.

3. ENVIRONMENTAL NOISE SURVEY METHODOLOGY

3.1. An unmanned environmental noise survey was undertaken at a single measurement location at the rear of the site. The survey was undertaken between 11:15 hours on Wednesday 6th April 2022 and 11:15 hours on Thursday 7th April 2022.

3.2. The sound level meter (SLM) was mounted onto an accessible on to a window at the rear façade of the property approximately 4 metres above ground level. The position is not considered to be ‘free-field’ therefore acoustic corrections of -3dB have been applied to the measurements. The position is considered to be representative of background noise levels at the nearest identified NSR. The monitoring position is identified in Appendix A.

3.3. The equipment used for the noise survey is summarised in Table 3.1.

Equipment	Description	Quantity	Serial Number
Svantek 977	Class 1 automated logging sound level meter	1	69298
ACO Pacific 7052E	Class 1 ½” microphone	1	69584
Svantek SV33A	Class 1 Calibrator	1	73297

Table 3.1 Description of Equipment used for Noise Survey

3.4. Ambient, background and maximum noise levels (L_{Aeq} , L_{A10} , L_{A90} and L_{AmaxF} respectively) were measured throughout the noise survey in consecutive 15-minute periods.

3.5. The noise survey and measurements were conducted, wherever possible, in accordance with BS7445-1:2003 ‘*Description and measurement of environmental noise. Guide to quantities and procedures*’. Measurements were made generally in accordance with ISO 1996-2:2007 ‘*Acoustics – Description, measurement and assessment of environmental noise – Part 2: Determination of environmental noise levels*’.

3.6. The noise monitoring equipment was calibrated before and after the noise survey period. No significant drift was recorded. Equipment calibration certificates can be provided upon request.

3.7. Weather conditions were noted to be:

- during installation were noted to be mild (approximately 13° Celsius), light drizzle, with overcast skies (with a 100% cloud cover), generally winds were light (5m/s), with occasional light puffs.
- during collection were noted to be mild (approximately 9° Celsius), generally dry, with cloudy skies (approximately 60-80% cloud cover) and a light wind (<5m/s).
- throughout the entire noise survey period - cold to mild (approximately 2-15° Celsius), generally dry, with clear skies (approximately 0-30% cloud cover) and typically low (0-5m/s) winds.

3.8. These weather conditions were checked against and confirmed by the use of the Met Office mobile application available on smart phone technology. These conditions were maintained throughout the whole survey period and are considered reasonable for undertaking environmental noise measurements.

4. EXTERNAL NOISE EMISSION CRITERIA

4.1. Local Authority Criteria

4.2. The proposed site lies within the jurisdiction of the Local Authority, Westminster City Council. An acoustic report is required to support a planning application as stipulated below:

“The assessment is to include the following information:

- The location of the nearest noise sensitive receptors and tranquil open spaces that may be affected by noise from the proposed plant or activity. Sensitive use includes residential use, educational establishments, hospitals, hotels, hostels, concert halls, theatres, law courts, and broadcasting and recording studios, but is not exhaustively limited to these use types. Indicate the distance of the window(s) and/or tranquil open space from the source in meters.*
- The proposed operational hours of the plant/activity, plant type, number and locations. The measured Ambient noise level (LAeq) for the 16 hours daytime and 8 hours night time (If plant to operate at night) to assess which planning condition applies (see Standard Planning Conditions on our website: www.westminster.gov.uk/planning-buildingand environmental-regulations/find-appeal-or-comment-planning-application/decisions-yourplanning-application/standard-conditions-and-informatives).*
- The representative lowest background noise level assessment (LA90 15 minutes) over the proposed hours of operation including the time, date and weather conditions, instrumentation and calibration, noise sampling locations and a copy of the noise survey data, (graphical & numerical).*
- Manufacturers Specifications of plant and/or proposed noise levels of internal activity in Octave or 1/3 octave band format.*
- Calculations for the predicted noise level 1 metre from the window of the nearest sensitive property including distance, directionality and screening effects.*
- You will need to demonstrate that the predicted noise level outside the most affected window will comply with the limits stated in our standard conditions. As a guideline these limits are normally 10dB below the lowest background LA90 (15mins). However, you will need to refer to Policy 33 in the City Plan 2019-2040 and the guidance in the draft Environmental Supplementary Planning Guidance, which may require correction penalties for tonality or intermittency.*
- Include any proposed attenuation measures and details of noise reductions achieved.*

Additionally, it is recommended that reference be made to BS 8233:2014, which contains guidance for commercial design criteria.”

4.3. It is understood that the plant will be operational Monday to Sunday 08:00 – 22:00. The noise criteria will therefore be set 10dB below the typical background levels of the stated operational hours from 10:00-22:00. In this case, the criteria to be met is a maximum rating noise level of 38dB LA90 measured at the NSR.

4.4. National Planning Policy Framework (2021)

4.5. In March 2012, the National Planning Policy Framework (NPPF) came into force and was revised in 2019 and 2021. This document replaces a great many planning guidance documents, which previously informed the planning system in England.

4.6. The NPPF (2021) sets out the Government's economic, environmental and social planning policies for England and these policies articulate the Government's vision of sustainable development.

4.7. The Noise Policy Statement for England (NPSE) published 2010 applies to *'all forms of noise, including environmental noise, neighbour noise and neighbourhood noise'*.

4.8. Paragraph 185 of the NPPF (2021) considers noise, stating:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- *a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
- *b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
- *c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation."*

4.9. National Planning Policy is guided by the NPPF. With regard to noise, the terms 'significant adverse impact' and 'other adverse impacts' are defined in the explanatory notes of the 'Noise Policy Statement for England' (NPSE). These state that there are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation.

They are:

- 'NOEL – No Observed Effect Level, this is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise, and

- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

4.10. Extending these concepts for the purpose of this NPSE leads to the concept of SOAEL - significant observed adverse effect level. This is the level above which significant adverse effects on health and quality of life occur'. However, no specific noise limits for LOAEL and SOAEL have been defined. Therefore, guidance from other acoustic standards must be employed to determine suitable levels within the overall principal of the National Planning Policy Framework; such as BS 8233:2014.

4.11. **BS 4142: 2014 +A1: 2019**

4.12. BS 4142: 2014 +A1: 2019 "Methods for Rating and Assessing Industrial and Commercial Sound" presents a method for assessing the significance and possible adverse impact due to an industrial or commercial noise source, based on a comparison of the source noise levels and the background noise levels, both of which are measured or predicted at a noise sensitive receiver e.g. a residential property.

4.13. The specific noise level due to the source is determined, with a series of corrections for tonality, impulsivity, intermittency or any other unusual characteristic. This can result in a maximum total correction of +21dB being added if the new noise source demonstrates all the above characteristics. The background noise level is then subtracted from the rating level and a comparison made.

4.14. The significance of the new noise source and the likelihood of any adverse impact is determined in accordance with the following advice:

"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs.

- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.*
- *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."*

5. NOISE SURVEY RESULTS

5.1. The ambient and background noise levels at the measurement position as seen in Appendix A are provided below and have been based on an analysis of the monitoring data.

5.2. A summary of the data results is provided in Table 5.1. The time history can be seen in Appendix B (TH1).

	Ambient Noise Level $L_{Aeq, 15min}$	Lowest Background Noise Level $L_{A90, 15min}$	Typical Background Noise Level $L_{A90, 15min}$
Day (07:00 – 23:00)	59dB*	48dB*	52dB*
Night (23:00 – 07:00)	52dB*	43dB*	46dB*
Operating Hours (08:00 – 22:00)	59dB*	48dB*	52dB*

*includes -3dB facade noise correction

Table 5.1 Summary of typical noise measurement data

5.3. These noise levels are considered normal to the site location. No significant abnormal noise sources were identifiable during installation or collection of the equipment. It is considered that the measured noise levels are reasonable given the location of the measurement position.

5.4. It is understood that the plant will only be operation during daytime (08:00 – 22:00) hours. Therefore, statistical analysis has been carried out to determine the typical daytime background noise level as shown in Figure 5.2.

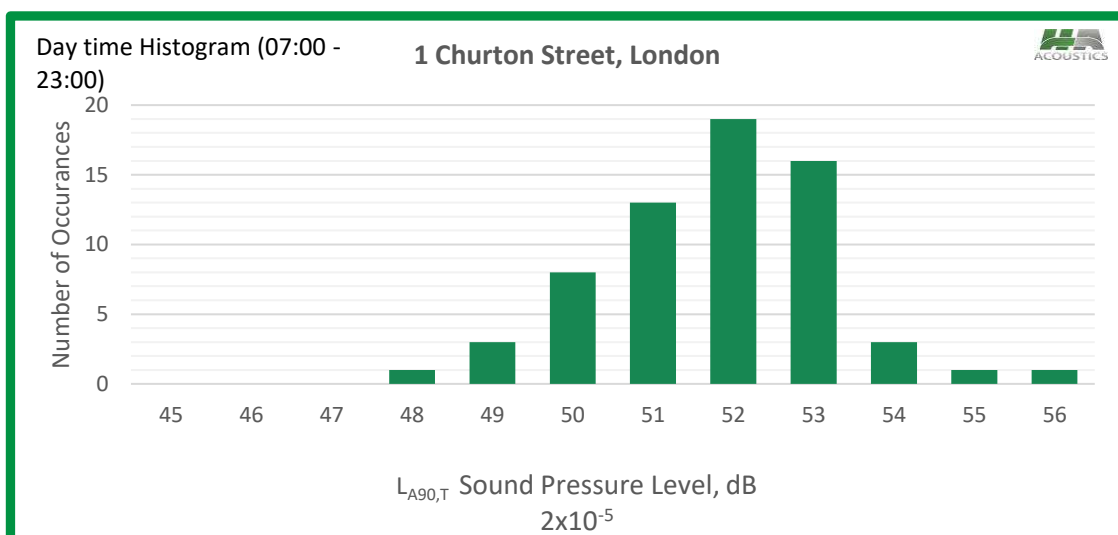


Figure 5.2 Statistical analysis of the typical daytime background noise level (LA90)

5.5. For robustness, the lowest LA90.15min value for the operating period has been utilized, at 48 dB.

6. NOISE IMPACT ASSESSMENT

6.1. It is proposed to install a Helios Gigabox GBD 630/4/4 Centrifugal fan externally on the first floor level roofing area with a 610mm x 610mm square extract ducting. The flue has been proposed to terminate vertically at roof level at approximately 9 meters from the fan casing. Calculations have been undertaken to gain the specific noise level of the plant using information provided by the client and from manufacturer specifications.

6.2. Table 6.1 lists the proposed plant to be installed and its operational maximum sound power level.

Plant Make/Model	Reference Sound Power Level*
Helios GigaBox GBD 630/4/4 Extractor Fan (Extract)	88dB
Helios GigaBox GBD 630/4/4 Extractor Fan (Casing Breakout)	71dB

* Manufacturer's specifications are provided in Appendix C.

Table 6.1 Proposed plant

6.3. Table 6.2 lists the sound power spectral data for the plant.

	Frequency Spectral Data (Hz) at 1m								dB(A)
	LZFeq 63	LZFeq 125	LZFeq 250	LZFeq 500	LZFeq 1000	LZFeq 2000	LZFeq 4000	LZFeq 8000	
Helios GigaBox GBD 630/4/4 Extractor Fan (Extract)	77	77	81	82	82	80	75	68	88
Helios GigaBox GBD 630/4/4 Extractor Fan (Casing Breakout)	68	68	57	57	56	54	50	44	71

Table 6.2 Spectral sound data

- 6.4. Detailed calculations to predict the noise level of the plant at 1metre from the NSR are given in Appendix D. The following factors have been taken into account during the assessment and within the calculations.
- 6.5. The line of sight to both ducting and extraction plant vary for each NSR will be accounted for in the calculations.
- 6.6. A ‘penalty’ addition has been added to the fans for intermittency as the operation is considered to be such that it has the potential to attract attention at the NSR. The penalty added is 6dB.
- 6.7. A penalty has not been applied for tonality as spectral data of the fans show no significant tonal characteristics. Penalty additions have not been applied for impulsiveness or any other unusual characteristics as plant of this type generally do not generate such features.
- 6.8. In order to meet the noise criteria of 38dB(A) at each NSR, the proposed extraction ducting requires mitigation due to its close proximity with NSR1. It is recommended that an acoustic attenuator is installed in the ducting system. The acoustic attenuator should provide sufficient attenuation to achieve a maximum sound pressure level of 57dB when measured at 1m in all directions. Table 6.3 gives typical figures of an acoustic attenuator that is assumed compatible with 610mm x 610mm rectangular ducting.

	Frequency Spectral Data (Hz) at 1m							
	LZFeq 63	LZFeq 125	LZFeq 250	LZFeq 500	LZFeq 1000	LZFeq 2000	LZFeq 4000	LZFeq 8000
Acoustica R02-6-1500 Rectangular Ducting Silencer	5	8	19	33	39	39	25	17

Table 6.3 Proposed Mitigation typical figures from Appendix C – Plant Manufacturers Specifications

- 6.9. The proposed plant installation with the acoustic attenuator would be expected to meet the requirements of the proposed noise criteria.
- 6.10. Detailed calculations to predict the noise level of the plant at 1metre from the NSRs are given in Appendix D. The rating noise level at 1m from closest NSR(1) is **38dB L_{Ar,Tr}** and **10dB(A) below** the assessed lowest background noise level (48dB L_{A90,T}).

- 6.11. The resultant sound pressure level has also been calculated at NSR2 at **30dB L_{Ar, Tr}** and at **NSR3 at 24dB L_{Ar, Tr}**. These are **18dB(A)** and **24dB(A)** below the assessed lowest background noise level (48dB L_{A90,T}).
- 6.12. In accordance with BS 4142:2014 guidance, the rating noise **“is an indication of the specific sound source having a low impact”**. *The lower the rating level is relative to the measured background level, the less likely it is that the specific sound source will have an adverse impact.*
- 6.13. It is strongly recommended that lined ductwork is utilized to form the duct run, as this will have the combined effect of reducing noise levels at duct terminus, as well as reducing stiffness and therefore vibration to the ductwork. Lining the duct will also increase duct wall attenuation, thus reducing noise break-out.
- 6.14. Vibration from plant is not expected. However, as a precaution, all plant should be installed with anti-vibration isolators. Anti-vibration mounts are widely available from system suppliers/installers and shall need to be installed in accordance with the type, make and model of the mechanical plant specified. Anti-vibration mounts are often in pedestal rubber mountings. Examples of these are MPO and MP1, and ISL Maxi pedestal vibration mounts. These types of anti-vibration and shock isolators are industry standard and commonplace on air conditioning and ventilation systems. They are designed to provide medium to high frequency isolation from vibration and noise via high resilience rubber. Once type, location, manufacturer make and model of proposed mechanical plant is known, the M+E contractor shall be able to advise upon the specific anti-vibration isolators required to ensure no adverse impact occurs.
- 6.15. As BS 4142:2014 advises, the impact must be considered within the context of the site and the surrounding acoustic environment. The following must, therefore, also be taken into consideration when determining the potential impact that may be experienced:
- The assessment is undertaken at the most affected existing residential windows. The impact on all other nearby residential windows will be lower due to screening and distance attenuation.

- The site is located within a busy urban area with other comparable uses with similar plant located within the vicinity.
- It should be noted that the above assessment is based on the plant operating simultaneously and at maximum duty. Given that the plant will not operate simultaneously at maximum capacity all of the time, the above assessment is considered to be representative of the worst case.

6.16. British Standard 8233:2014 'Sound insulation and noise reduction for buildings – Code of Practice' gives recommendations for acceptable internal noise levels in residential properties. Assuming worst case conditions, of the closest window being for a bedroom, BS8233:2014 recommends 35dB(A) as being acceptable internal resting/sleeping conditions during the day-time, which is when the mechanical plant shall operate. According to BS8233:2014, the façade of a residential dwelling; with a window partially open for ventilation offers 15 dB attenuation. Therefore, taking into account this reduction for a partially open window the internal noise level with the plant operating would be 20dB(A) which is lower than the acceptable internal noise level as seen under BS 8233: 2014; and significantly lower than the background.

6.17. The client confirms that to control odour, they will install and utilize a Carbon Filters system. 24 panel carbon filtration box, which uses 2 sections of 600mm x 600mm x 20mm replaceable carbon filters.

6.18. The passive air flow, Purified Air SiteSafe Carbon Filtration system datasheet is shown in Appendix C.

7. UNCERTAINTY

- 7.1. The levels of uncertainty in the data and calculations are considered to be low given the robust exercise undertaken in noise monitoring and the confidence in the statistical analysis.
- 7.2. All measurements taken on-site by instrumentation are subject to a margin of uncertainty. This is relatively small, with a sound level meter manufacturer's margin of uncertainty at +/-1.1dB. It is due to the tolerances associated with the Class 1 sound level meter and calibrator equipment used to measure background.
- 7.3. The meter and calibrator used have a traceable laboratory calibration and were field calibrated before and after the measurements.
- 7.4. Manufacturers' data for the plant is likely to be robust. Detailed calculations and resultant noise levels at the residential location are considered to be confidently predicted.
- 7.5. Uncertainty in the calculated impact has been reduced by the use of a well-established calculation method.

8. CONCLUSION

8.1. A noise assessment has been undertaken at The Old Bank, 1 Churton Street, London SW1V 2JX. The noise survey was undertaken at a fixed monitoring point, representative of the nearest noise sensitive receptor.

8.2. Following on-site measurement of pre-existing noise levels, calculations have been made of the noise rating level of the proposed plant at the NSR. From this assessment, together with information from the plant manufacturer, the potential noise impact has been determined.

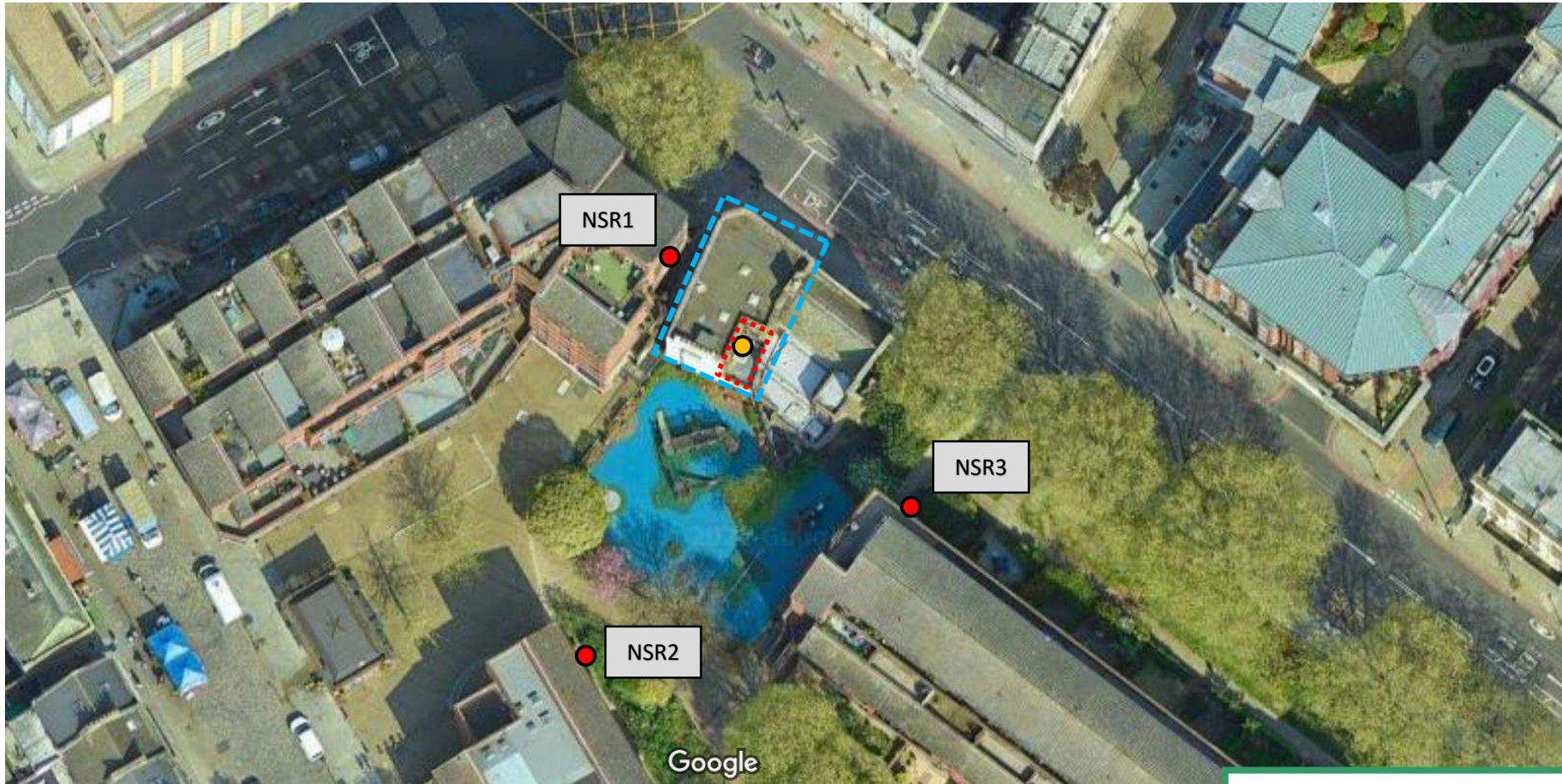
8.3. Noise levels from the plant at the NSRs are predicted to be:

- **NSR1 38dB L_{Ar}, Tr**
- **NSR2 30dB L_{Ar}, Tr**
- **NSR3 24dB L_{Ar}, Tr**

8.4. BS 4142: 2014 +A1: 2019 assessment methodology shows that the rating noise level from the kitchen extract system is predicted to be **10dB(A) below** the lowest background level of **48dB L_{A90, 15min}** at the NSRs. In accordance with BS 4142:2014, noise levels from the plant ***“is an indication of the specific sound source having a no observed effect level”***.

8.5. The resultant sound pressure level has also been calculated at NSR2 at **30dB L_{Ar, Tr}** and at NSR3 at **24dB L_{Ar, Tr}**. These are **18dB(A)** and **24dB(A) below** the assessed lowest background noise level (48dB L_{A90,T}).

8.6. Considering the results of the noise survey, the illustrative layouts and the calculations, the predicted resultant noise levels from the proposed plant are predicted to meet appropriate and reasonable guidance and the relevant noise criteria. Therefore, an adequate level of protection against noise for occupants of the nearest noise sensitive receptor is afforded; including when factoring in potential uncertainty.



Key:

- Noise Monitoring Position 
- Noise Sensitive Receptor 
- Proposed Plant 
- Site Boundary 

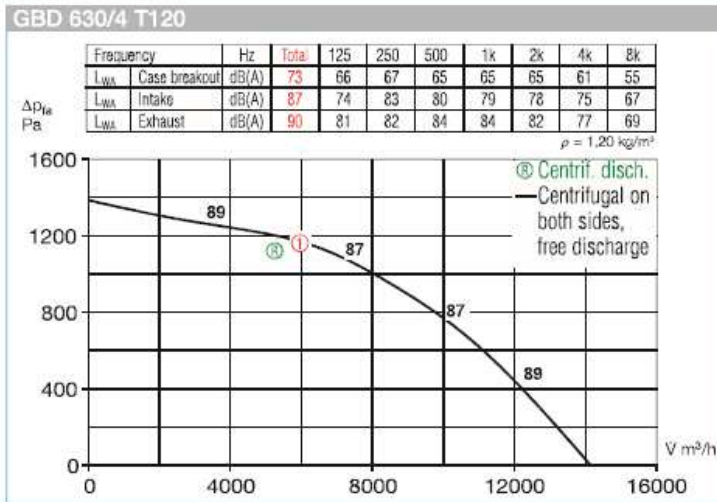
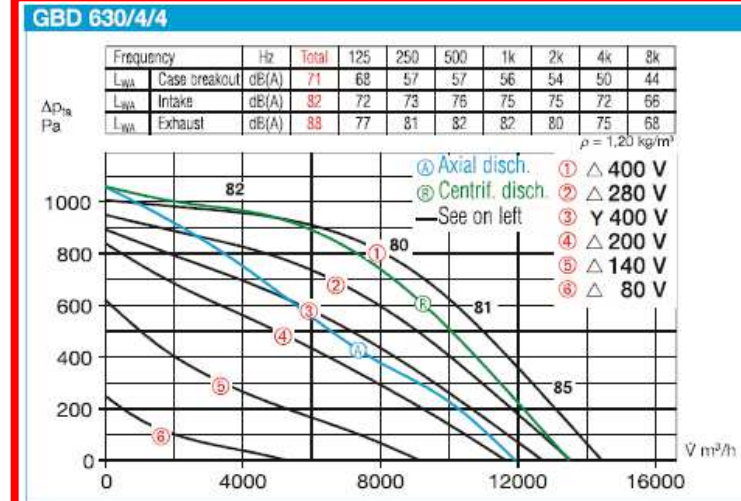
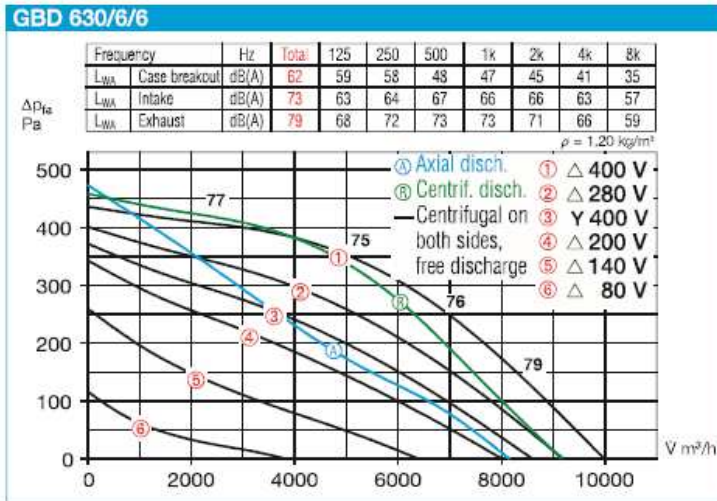
Appendix B.1 - NMP1 Time History

1 Churton Street, London
Wednesday 6th April 2022 - Thursday 7th April 2022



Helios

GigaBox centrifugal fan 630 mm ϕ



R02 6 RECTANGULAR SILENCER

Available in **eight** standard lengths R02 6 Rectangular Duct Mounted Silencers have excellent attenuation properties, achieved with sound absorbing infill splitters, retained in the attenuator casing by a perforated liner.

The resistance to airflow is a function of the face velocity and length. It is not recommended to select the R02 6 silencers with a face velocity above 6 metres per second without asking advice regarding re-generated self noise. We can advise on the selections and can perform system analysis to ensure the correct unit is specified.

INSERTION LOSS (db) - CENTRE BAND FREQUENCY

PRODUCT CODE	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
R02 6-600	2	3	6	7	12	14	11	10
R02 6-900	3	6	11	19	24	24	15	11
R02 6-1200	4	7	15	26	29	32	20	14
R02 6-1500	5	8	19	33	39	39	25	17
R02 6-1800	6	10	21	36	45	45	28	19
R02 6-2100	7	13	25	43	50	50	33	21
R02 6-2400	7	15	28	49	50	50	38	25

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.

Sitesafe Carbon Filters

We manufacture Sitesafe carbon filters, these innovative carbon units measure 594x196x597mm, three combining to 594x594x597mm, directly replacing our original carbon blocks whilst providing exactly the same filter performance as an existing full size cell.

Their advantage is that they only weigh 18kg each against the 68kg of our original blocks. This takes the strain out of fitting and servicing, allowing only one engineer to complete the task where two had been previously required.

Our Sitesafe carbon filters use panels of activated carbon to remove the malodorous gases within the commercial kitchen extract duct through the process of chemical adsorption. By installing our ESP units before our Sitesafe filters, the carbon life span is greatly increased, allowing it to nullify malodours at optimum efficiency for much longer.

Will require two people plus lifting gear to carry and install.



Carbon PA242424

Size 594x594x597
Gross Weight 68.20kg
Carbon Weight 50.00kg
Rated Airflow 3600m³/hr*
Pressure Drop 120Pa

Safe for one person to carry. No special lifting gear required.



Sitesafe PA240824

Size 594x196x597
Gross Weight 17.95kg
Carbon Weight 16.6kg
Rated Airflow 1200m³/hr*
Pressure Drop 120Pa



Sitesafe 3 x PA240824

Size 594x594x597
Gross Weight 53.85kg
Carbon Weight 50.00kg
Rated Airflow 3600m³/hr*
Pressure Drop 120Pa



Please see below for the recommended minimum dwell times required for different applications and scale up accordingly.

It should be noted that filtration performance will be improved by increasing the dwell times applied.

Application	Recommended Dwell Time	Grade
Cooking - Low Odour, Tea Shop, Canteens	0.1 to 0.2 Seconds	Carbon grade Enhanced for improved performance for light catering odours
Cooking - Moderate Odour, Pizza, Steak House, French, Italian, Pubs, Chinese, Japanese, Cantonese	0.2 to 0.4 Seconds	Enhanced Carbon grade suitable for many applications 65% Minimum CTC
Cooking High Odour, Indian, Thai, Vietnamese, Kebab	0.4-0.6 Seconds	Enhanced Carbon grade suitable for many applications 65% Minimum CTC
Cooking Very High Odour, Fried Chicken, Pubs with large fried food turnover, Fish and Chip Shops, Fast Food / Burgers	0.4-0.8 Seconds	Enhanced Carbon grade suitable for many applications 65% Minimum CTC
Reduction of Kerosene Exhaust fumes	0.1 to 0.2 Seconds	General Purpose Activated Carbon
Reduction of Ozone	0.1 to 0.2 Seconds	General Purpose Activated Carbon
Reduction of Diesel Fumes, including H ₂ S, SO ₂ , NOX, HCl	0.2 Seconds	Carbon Museum/Archive, Café Directive: SO ₂ SOX NO ₂ NOX Removal
Museum and Archives	0.2 Seconds	Carbon Museum/Archive, Café Directive: SO ₂ SOX NO ₂ NOX Removal

The cooking odour classes above are as classified by DEFRA in **Guidance on the Control of Odour and Noise from Commercial Kitchen Exhaust Systems, PB10527**.



Noise Sensitive Receiver 1

Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan

	Frequency Spectral Data (Hz)								dB(A)
	63	125	250	500	1000	2000	4000	8000	
Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan (Exhaust)	77	77	81	82	82	80	75	68	86
Conversion to Sound Pressure Level	-11	-11	-11	-11	-11	-11	-11	-11	
Directivity (Q=2)	3	3	3	3	3	3	3	3	
Distance Attenuation (9m from Extract Terminus)	-19	-19	-19	-19	-19	-19	-19	-19	
BS4142:2014+A1:2019 Intermittency Correction	6	6	6	6	6	6	6	6	
Direct Line of Sight	0	0	0	0	0	0	0	0	
Acoustica R02-6-1500 Rectangular Ducting Silencer	-5	-8	-19	-33	-39	-39	-25	-17	
Exhaust Noise Rating Level (LAR,Tr) at 1m from NSR1	51	48	41	28	22	20	29	30	38
Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan (Case Breakout)	68	68	57	57	56	54	50	44	61
Conversion to Sound Pressure Level	-11	-11	-11	-11	-11	-11	-11	-11	
Directivity (Q=2)	3	3	3	3	3	3	3	3	
Distance Attenuation (20m from Fan Case)	-26	-26	-26	-26	-26	-26	-26	-26	
BS4142:2014+A1:2019 Intermittency Correction	3	3	3	3	3	3	3	3	
No Line of Sight	-10	-10	-10	-10	-10	-10	-10	-10	
Case Outbreak Noise Rating Level (LAR,Tr) at 1m from NSR1	27	27	16	16	15	13	9	3	20
Combined Sound Pressure Level (Extract and Fan Case Outbreak)	51	48	41	28	23	21	29	30	38
Noise Rating Level (LAR,Tr) at 1m from NSR1	51	48	41	28	23	21	29	30	38

Lowest Background Noise Level	48
Noise Criteria	38
No Observed Effect Level	

BS8233: Internal Day Time Levels

	Frequency Spectral Data (Hz)								dB(A)
	63	125	250	500	1000	2000	4000	8000	
Calculated level at NSR	51	48	41	28	23	21	29	30	38
Partially Open Window Attenuation	-15	-15	-15	-15	-15	-15	-15	-15	
Calculated level in Internal Receiver	36	33	26	13	8	6	14	15	23

BS8233 Day Time Criteria	35
--------------------------	----

Noise Sensitive Receiver 2

Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan

	Frequency Spectral Data (Hz)								dB(A)
	63	125	250	500	1000	2000	4000	8000	
Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan (Exhaust)	77	77	81	82	82	80	75	68	86
Conversion to Sound Pressure Level	-11	-11	-11	-11	-11	-11	-11	-11	
Directivity (Q=2)	3	3	3	3	3	3	3	3	
Distance Attenuation (33m from Extract Terminus)	-30	-30	-30	-30	-30	-30	-30	-30	
BS4142:2014+A1:2019 Intermittency Correction	6	6	6	6	6	6	6	6	
Line of Sight	0	0	0	0	0	0	0	0	
Acoustica R02-6-1500 Rectangular Ducting Silencer	-5	-8	-19	-33	-39	-39	-25	-17	
Exhaust Noise Rating Level (LAR,Tr) at 1m from NSR2	40	37	30	17	11	9	18	19	27
Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan (Case Breakout)	68	68	57	57	56	54	50	44	61
Conversion to Sound Pressure Level	-11	-11	-11	-11	-11	-11	-11	-11	
Directivity (Q=2)	3	3	3	3	3	3	3	3	
Distance Attenuation (33m from Fan Casing)	-30	-30	-30	-30	-30	-30	-30	-30	
BS4142:2014+A1:2019 Intermittency Correction	3	3	3	3	3	3	3	3	
Line of Sight	0	0	0	0	0	0	0	0	
Case Breakout Noise Rating Level (LAR,Tr) at 1m from NSR2	33	33	22	22	21	19	15	9	26
Combined Sound Pressure Level (Extract and Fan Case Outbreak)	41	38	31	23	21	19	20	19	30
Noise Rating Level (LAR,Tr) at 1m from NSR2	41	38	31	23	21	19	20	19	30

Lowest Background Noise Level	48
Noise Criteria	38
No Observed Effect Level	

BS8233: Internal Day Time Levels

	Frequency Spectral Data (Hz)								dB(A)
	63	125	250	500	1000	2000	4000	8000	
Calculated level at NSR	41	38	31	23	21	19	20	19	30
Partially Open Window Attenuation	-15	-15	-15	-15	-15	-15	-15	-15	
Calculated level in Internal Receiver	26	23	16	8	6	4	5	4	15

BS8233 Day Time Criteria	35
--------------------------	----

Noise Sensitive Receiver 3

Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan

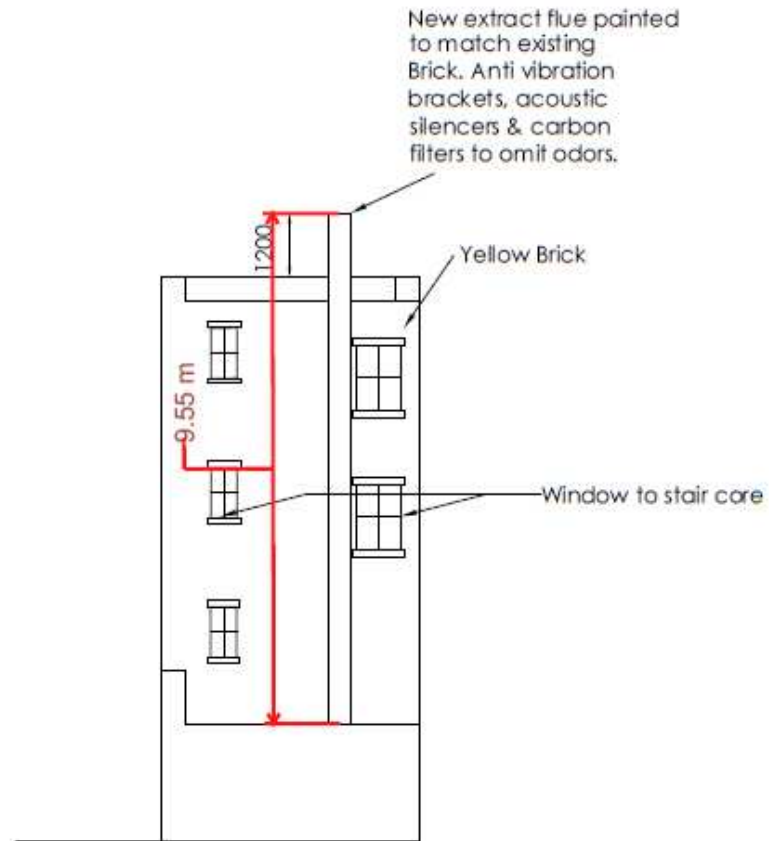
	Frequency Spectral Data (Hz)								dB(A)
	63	125	250	500	1000	2000	4000	8000	
Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan (Exhaust)	77	77	81	82	82	80	75	68	86
Conversion to Sound Pressure Level	-11	-11	-11	-11	-11	-11	-11	-11	
Directivity (Q=2)	3	3	3	3	3	3	3	3	
Distance Attenuation (26m from Extract Terminus)	-26	-26	-26	-26	-26	-26	-26	-26	
BS4142:2014+A1:2019 Intermittency Correction	6	6	6	6	6	6	6	6	
No Line of Sight	-10	-10	-10	-10	-10	-10	-10	-10	
Acoustica R02-6-1500 Rectangular Ducting Silencer	-5	-8	-19	-33	-39	-39	-25	-17	
Exhaust Noise Rating Level (LAR,Tr) at 1m from NSR	34	31	24	11	5	3	12	13	21
Helios GigaBox GBD 630/4/4 Centrifugal Extract Fan (Case Breakout)	68	68	57	57	56	54	50	44	61
Conversion to Sound Pressure Level	-11	-11	-11	-11	-11	-11	-11	-11	
Directivity (Q=2)	3	3	3	3	3	3	3	3	
Distance Attenuation (26m from Fan Casing)	-26	-26	-26	-26	-26	-26	-26	-26	
BS4142:2014+A1:2019 Intermittency Correction	3	3	3	3	3	3	3	3	
No Line of Sight	-10	-10	-10	-10	-10	-10	-10	-10	
Case Breakout Noise Rating Level (LAR,Tr) at 1m from NSR	27	27	16	16	15	13	9	3	20
Combined Sound Pressure Level (Extract and Fan Case Outbreak)	35	32	25	17	15	13	14	13	24
Noise Rating Level (LAR,Tr) at 1m from NSR	35	32	25	17	15	13	14	13	24

Lowest Background Noise Level	48
Noise Criteria	38
No Observed Effect Level	

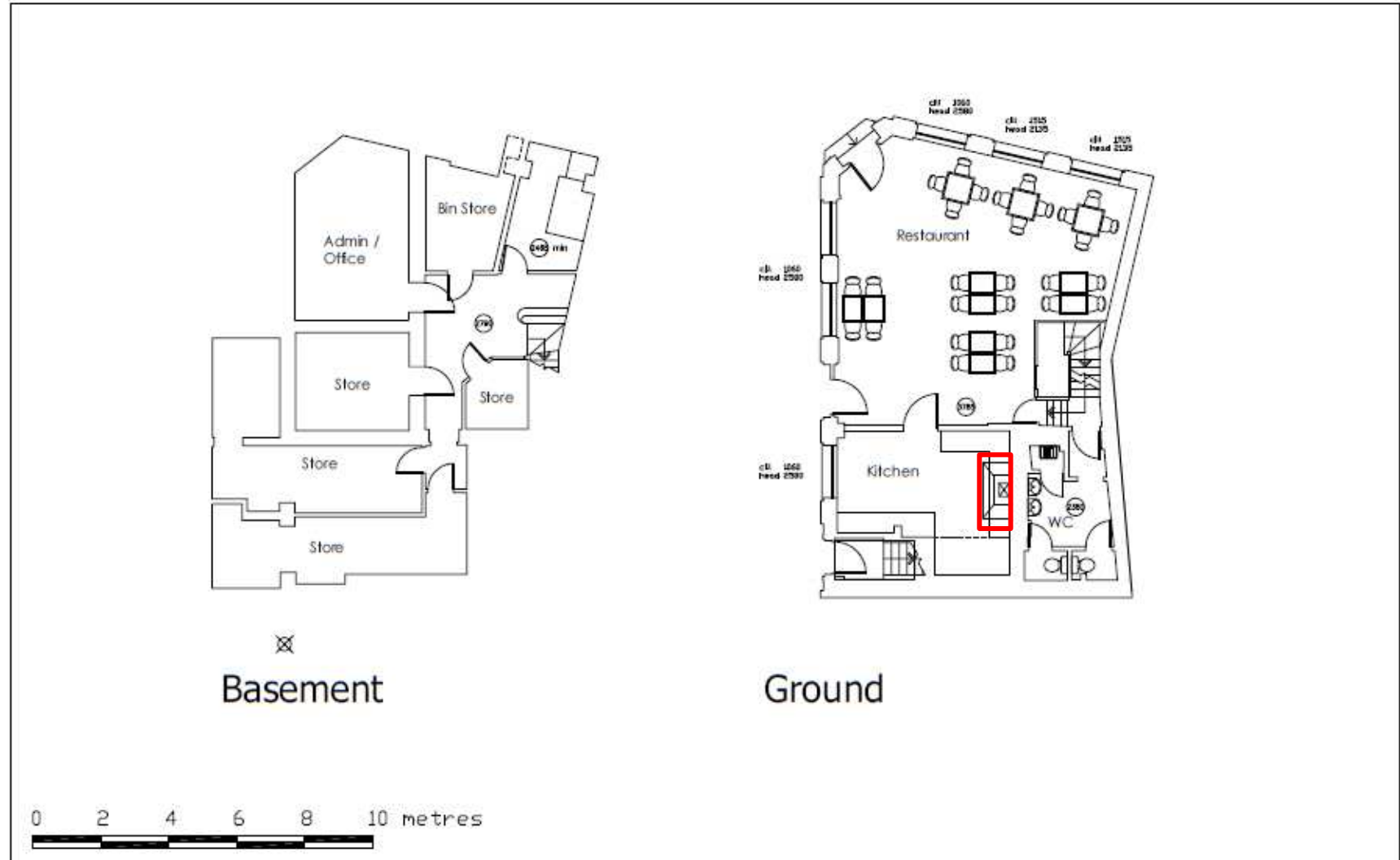
BS8233: Internal Day Time Levels

	Frequency Spectral Data (Hz)								dB(A)
	63	125	250	500	1000	2000	4000	8000	
Calculated level at NSR	35	32	25	17	15	13	14	13	24
Partially Open Window Attenuation	-15	-15	-15	-15	-15	-15	-15	-15	
Calculated level in Internal Receiver	20	17	10	2	0	-2	-1	-2	9

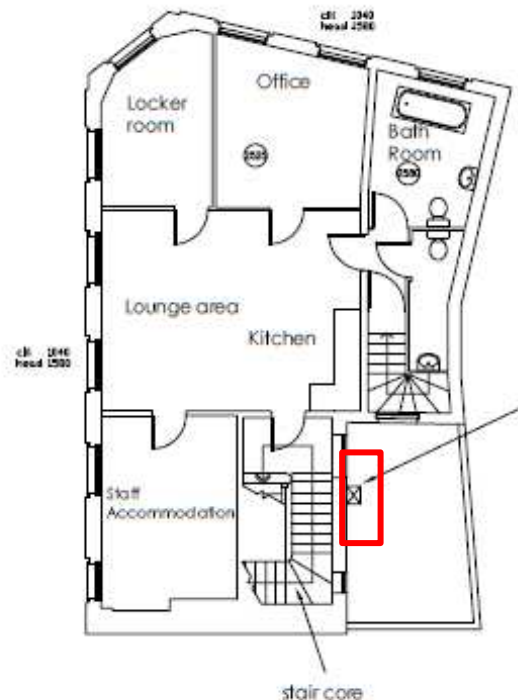
BS8233 Day Time Criteria	35
--------------------------	----



Existing Rear Side Elevation

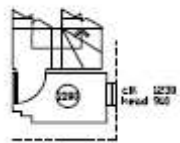


<p>Project</p> <p>1-3 Clifton Street London SW1V 2JX</p>	<p>Title Proposed Basement & Ground floor Plans</p> <p>Ref ICS - 1003</p> <p>Scale 1:100 on A3</p> <p>Date Jan 2022</p>	<p>Notes & Revisions</p>	<p><small>FOR INFORMATION ONLY THIS DOCUMENT IS NOT TO BE USED FOR CONSTRUCTION UNLESS SPECIFICALLY STATED OTHERWISE BY THE CLIENT'S REPRESENTATIVE</small></p>	<p>Area</p>	<p>Ambia Karmen</p>
---	---	-------------------------------------	---	--------------------	---------------------



First

New extract flue pointed to match existing Brick. Anti vibration brackets, acoustic silencers & carbon filters to omit odors.

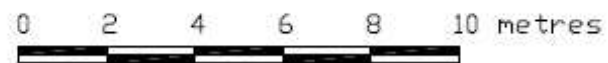


Half-landing



Second

New extract flue pointed to match existing Brick. Anti vibration brackets, acoustic silencers & carbon filters to omit odors.



Project 1-3 Churlton Street London SW1V 2JA	Title Proposed 1st & 2nd floor Plans	Notes & Revisions	Area:	Ambia Karmen 02034 500 870 Instagram: ambiakarmenarchitecture
	Ref ICS - 1004			
	Scale 1:100 on A3			
	Date Jan 2022			



HEALTHY ABODE ACOUSTICS

BUILDING ACOUSTICIANS & ENVIRONMENTAL NOISE CONSULTANTS

PHONE

EAST ANGLIA 01245 206 250
LONDON & NATIONAL 0203 371 980
SOUTH-WEST 01752 426 118

WEB WWW.HA-ACOUSTICS.CO.UK

EMAIL INFO@HA-ACOUSTICS.CO.UK

HEAD OFFICE

HA ACOUSTICS, OFFICE F9, ALLEN HOUSE,
THE MALTINGS, STATION ROAD, SAWBRIDGEWORTH CM21 9JX



MEMBER OF THE FEDERATION
OF SMALL BUSINESSES



10263

UKAS accredited laboratory
for Sound Insulation Testing

