NOISE IMPACT ASSESSMENT

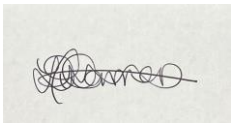
BS 4142:2014+A1:2019

Commercial Noise:
Restaurant/Takeaway

REPORT DETAILS

Site Address	1258 Uxbridge Road, Hayes, UB4 8JF
Report Title	Noise Assessment: Commercial Noise, Restaurant/Takeaway
Project No.	NALPRO280924.1b
Consultant Contact	jonathan@noiseassessments.co.uk

QUALITY ASSURANCE

Issue No.	Status	Issue Date	Comments	Author	Approved
1	FINAL	08/11/24	-		
				J Mape BSc (Hons) PgDip IOA Cert. Environ. Noise TechIOA **Noise Consultant**	D Warren **Director**

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Contents

1. Proposal

1.1 A ground floor commercial property wishes to operate as a Pizza/chicken restaurant/takeaway (herein referred to as the site) is applying for planning permission to operate their extraction system for their restaurant/takeaway and is required to confirm their external flue complies with external noise guidance. The client has completed a noise assessment at 1258 Uxbridge Road, Hayes, UB4 8JF.

1.2 The primary internal noise source is customers voices and background music within the restaurant on the ground floor. There will be residential dwellings above on the first floor.

1.3 According to BS4142:2014, the following 'Low Impact' target should be achieved. It is useful to consider the exceedance of the background noise level in relation to the lower frequency bands, 63Hz and 125Hz, due to the prominent low frequency content within recorded music.

1.4 A noise assessment is required to assess the likely noise impact from noise generated from the extractor fan unit flue within the rear of the site with the air vented at ground floor level to the ground floor roof. The extract fan inside the kitchen and the discharge flue are insulated to stop further noise breakout. The extract ducting is rigid in construction and installed with anti-vibration mountings. Large section ducts may include bracing or stiffeners to prevent drumming. Lined or lagged ducts, including bends, elbows or spigots, may be required if additional noise reduction is necessary.

Consultant

1.5 Jonathan has experience in environmental, noise and vibration monitoring, acoustic consultancy and impact assessment gained over a period of 20 years in the industry, across the UK, Australia, Brunei, Turkey and the Middle East. He has a Degree in Environmental Science, Postgraduate Diploma in Environmental Monitoring and is a member of the Institute of Acoustics (TechIOA). He has also completed the IOA Certificate in Environmental Noise, from the University of Liverpool.

1.6 Jonathan specialises in the measurement and assessment of noise and vibration for a wide range of planning applications, including those requiring EIA, across the industrial, commercial, residential, and mineral extraction sectors. Jonathan is also involved in undertaking various aspects of indoor occupational monitoring and reporting for projects relating to worker health.

2. Existing Context

2.1 The site (ground floor level) is an attached terraced building set within a residential/commercial row of 2-storey detached buildings. The site is surrounded by residential apartments on the first floors, and commercial units on a main road.

2.2 The environmental health department of the local planning authority is likely to raise concerns of noise emissions from the use of the fan extraction unit venting noise on sensitive residential properties during the daytime.

3. Criteria

3.1 The following targets have been selected in accordance with 'BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound.' This will be achieved when the Rating Level is below the representative background sound level.

3.2 The operational noise from the restaurant space and kitchen should not exceed NR20 Leq,T, within the existing residential apartments above.

3.3 The NR20 criterion is spectrum-based criterion, which require that the maximum noise level at a range of frequencies should not be exceeded as indicated in the tables below.

Table 1: NR

	Octave Centre-Frequency Band, Hz						
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**
NR20	51	39	31	24	20	17	14

3.4 Whilst there are no prescribed standards for the assessment of noise impact where human voice is the primary source, reference can be made to 'BS8233:2014 – Guidance on sound insulation and noise reduction for buildings' [British Standards Institution] which gives guideline criteria for internal ambient noise levels in residential dwellings.

4. Noise Policy and Guidance

Noise Policy Statement for England (NPSE)

4.1 The NPSE sets out the Government's policy on noise and includes the long-term vision of promoting good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

4.2 This long-term vision is supported by the following aims:

4.3 Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and

- where possible, contribute to the improvement of health and quality of life.

4.4 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;
- LOAEL (Lowest Observed Adverse Effect Level) – this is the level above which adverse effects on health and quality of life can be detected.

4.5 Extending these concepts further, NPSE leads to the concept of a significant observed adverse effect level:

- SOAEL (Significant Observed Adverse Effect Level) – this is the level above which significant adverse effects on health and quality of life occur.

4.6 NPSE acknowledges that it is not possible to have a single objective noise-based measure that defines NOEL, LOAEL and SOAEL that is applicable to all sources of noise in all situations. It is therefore suggested that more specific advice from other applicable noise standards and guidance could be employed to determine suitable noise level criteria within the overall principles of the NPSE.

National Planning Policy Framework (NPPF)

4.7 The revised NPPF was updated on 5 September 2023 and 19 December 2023 and sets out the government's planning policies for England and how these are expected to be applied. This document replaces the first NPPF published in March 2012 and includes minor clarifications to the revised version published in July 2018, February 2019, July 2021.

4.8 Where issues of noise impact are concerned the NPPF provides brief guidance in Chapter 15 '*Conserving and enhancing the natural environment*' as follows:

Paragraph 170:

Planning policies and decisions should contribute to and enhance the natural and 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.

Paragraph 180:

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.

Paragraph 182:

Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

Planning Practice Guidance (PPG)

4.9 PPG is written in support of the NPPF and provides an increased level of specific planning guidance.

4.10 It suggests that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It is also suggested that noise should not be considered in isolation and separately from issues such as the economic, social and other environmental dimensions of proposed development.

4.11 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.

Technical Guidance

BS 4142:2014+A1:2019 – Methods for rating and assessing industrial and commercial sound'

BS4142 Is a recognised standard for assessing the noise impact of fixed plant machinery via relation of noise emissions to current background noise levels.

5. Nearest Sensitive Receptor Locations

5.1 The nearest noise sensitive receptors (NSRs) have been identified as residential apartments above the site and to the rear of the site.

6. Subjective Impressions

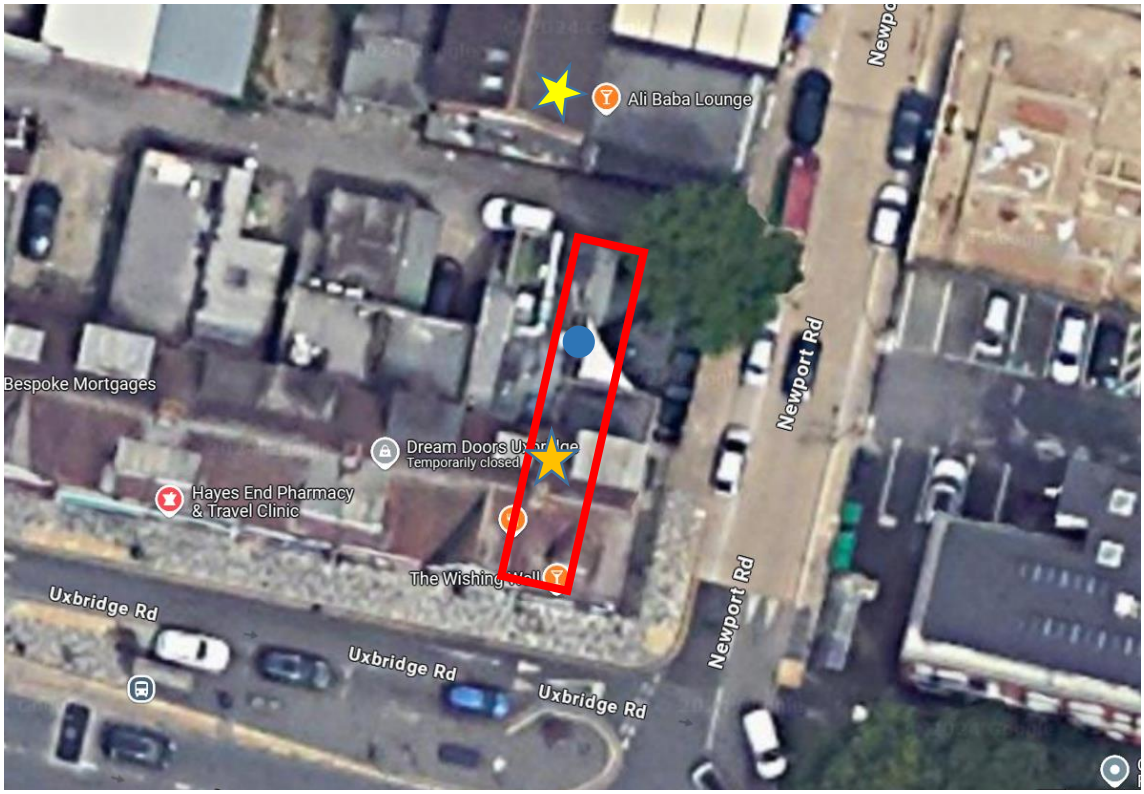
6.1 The noise climate at the rear of the site is dominated by occasional road traffic throughout the day and evening including cars and HGVs / LGVs where tyre / road interaction noise. Secondary noise sources have been identified as bird song and people chatting and another extraction flue.

7. Measurement Locations

7.1 Background noise measurements were undertaken outside the rear of the nearest sensitive receptor. The data collected during this period has been used to characterise the existing acoustic environment around the site.

7.2 Measurement and NSR locations are shown in figure 1 below:

Figure 1: Site & Measurement Location



Background measurement location M1

Site location

NSR1 (7m)

NSR2 (8m)

8. Measurement Procedure

8.1 Noise levels were measured on 10th October 2024. Full measurement times and durations can be found in **Appendix B**.

9. Measurement Equipment

9.1 Measurements were undertaken using a calibrated, Pulsar N45 class 1 sound level meter. Full equipment details can be found in Appendix C.

9.2 During all measurements the microphone was protected with an outdoor windshield.

9.3 Measurements at all monitoring locations were 'free field' (no vertical reflective surfaces within 3.5 metres of the microphone) and at a height of between 1.2 – 1.5 metres above ground level.

9.4 The following set-up parameters were used on the sound level meters:

- Time Weighting: Fast
- Frequency Weighting: A
- Averaging-Integrating Period: 15 minutes
- Data Logging: Repeat (Contiguous)

9.5 With the equipment set up in the configuration used during measurement, field calibration checks were performed on site immediately before and after the survey period using a sound calibrator. No significant drift (i.e. no greater than ±0.5 dB) in the calibration value was observed between the initial and final checks.

9.6 Full calibration details can be provided.

10. Weather Conditions

10.1 Weather conditions were deemed acceptable for background noise measurement. Full meteorological conditions are detailed in **Appendix E**.

11. Noise Source Levels

11.1 The noise level of the extraction unit has been provided by the manufacturer.

11.2 The outlet noise level is tabulated below:

Table 2: Manufacturer Noise Level

Equipment	LAeq (dB)	r, m
Extractor fan outlet	60	3.0

BS4142:2014 Assessment

12. Specific Sound Levels

12.1 The specific sound level is denoted LAs and is the A-weighted, equivalent noise level at the NSR locations over the reference time period.

12.2 The NSRs are located directly below the exit flue, however the location of the extractor ducting will be above the receptor eaves and with no direct line of sight for the apartments. See Figure 1 for the location of sensitive receptors. Full calculations are shown in **Appendix F**:

12.3 The Specific Sound Level of the air vented from the flue at the nearest NSR locations at the rear of the site are summarised below:

Table 3: Specific Sound Levels

NSR	Specific Sound Level, Db L_{As}
1 (8m)	48
2 (7m)	51

13. Background Sound Level

13.1 Environmental noise levels were measured on site 10th October 2024.

13.2 The lowest daytime background sound level was measured between 20:00-20:15 as 42 dB LA90,15min.

14. Rating Level

14.1 The specific sound level may be corrected for certain characteristics that make a sound more noticeable at the NSR locations. Corrections for tonality, impulsivity and intermittency may be applied.

14.2 The associated rating penalties and resultant sound rating levels, dB LAr, are tabulated below:

Table 4: Rating Penalties, dB, and Sound Rating Levels

NSR	dB L_{As}	Tonality	Impulsivity	Intermittency	dB L_{Ar}
1	48	3	0	0	51
2	51	3	0	0	54

15. Rating Level Vs Background

15.1 The rating level is to be compared to the background sound level to determine the resultant noise impact in accordance with BS4142:

> A Sound Rating Level at or below the background noise level is indicative of *Low Impact;*
>
> A Sound Rating Level that exceeds the background noise level by around + 5dB is likely an indication of *Adverse Impact*, depending on the context;
>
> A Sound Rating Level that exceeds the background noise level by around + 10dB is likely an indication of *Significant Adverse Impact*, depending on the context.

15.2 The noise impact during the daytime is tabulated below:

Table 5: Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
1	51	9	**Adverse Impact**
2	54	12	**Significant Adverse Impact**

15.3 Significant Adverse Impact has been identified at the NSRs therefore mitigation is required in the form of a silencer to reduce the noise level be at least -17db in order to be classed as low impact.

16. Internal Noise Level

From Voices, Music, Chair movement, and Kitchen operations

16.1 Whilst there are no prescribed standards for the assessment of noise impact where human voice is the primary source, reference can be made to 'BS8233:2014 – Guidance on sound insulation and noise reduction for buildings' [British Standards Institution] which gives guideline criteria for internal ambient noise levels in residential dwellings.

16.2 The primary noise source within the restaurant will be customers' voices and background music. Internal noise level has been derived based on measured noise levels during a busy evening.

16.3 The following spectral data from the internal onsite noise monitoring in the takeaway is tabulated below:

16.4 This figure is assumed as a worst-case scenario for internal noise levels with everything in the takeaway occurring at the same time.

Table 6: Internal Noise Within Ground Floor Area

	Octave Centre-Frequency Band, Hz							**Equivalent A-Weighted Sum, dB L_{Aeq}**
	63	**125**	**250**	**500**	**1k**	**2k**	**4k**	
Internal noise	46	53	60	63	55	51	46	**64**

17. Internal Noise Transfer from Restaurant

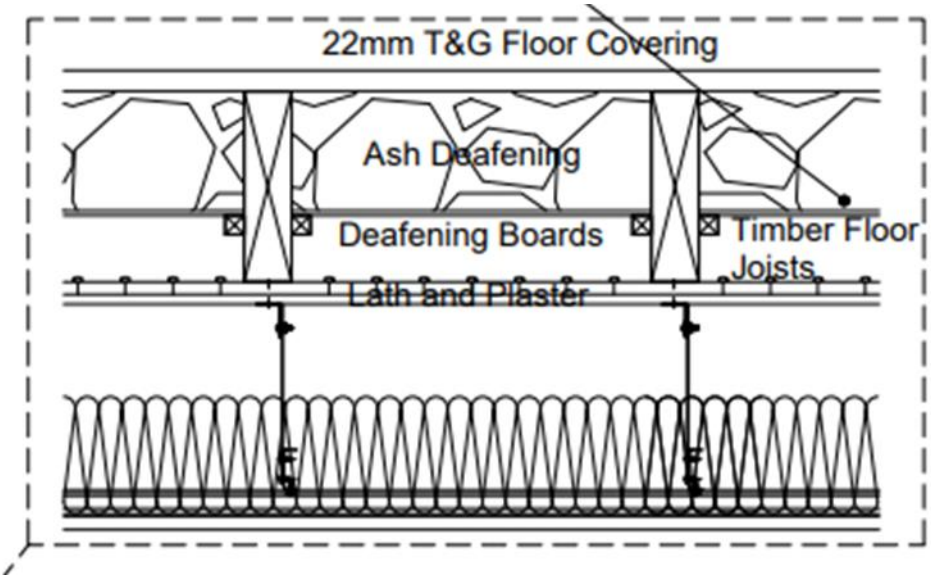
17.1 There are commercial units either side of the unit in question therefore the only sound breaking structure between the commercial and residential unit is above.

17.2 Ground floor ceiling partition specifications have been modelled in InsulTM (Marshall Day Acoustics).

Building Ceiling Insulation

17.3 The restaurant ceiling is floorboards wooden joist and plasterboard. See appendix for original flooring spec. results.

17.4 An improved floor/ceiling partition separating the ground-floor from the residential dwellings has been determined as shown below.



17.5 Noise breakout from customer voices, background music and chopping of food will occur through the ceiling into the above dwelling which is unlikely to achieve the desired noise reduction.

17.6 Based on the proposed acoustic ceiling detailed below. the result of the noise in the above dwelling is shown below with details of the system provided in the Appendix.

Table 7: NR20 via the acoustic ceiling

Frequency, Hz	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**
Source Noise Level, dB Lz	46.0	53.0	60.0	63.0	55.0	51.0	46.0
Ceiling Spec.	30.0	48.0	58.0	64.0	67.0	74.0	77.0
Internal Noise, dB Leq	15.0	4.0	1.0	-2.0	-13.0	-24.0	-32.0
A-Weighting	-26.2	-16.1	-8.6	-3.2	0.0	1.2	1.0
Internal Noise, dB, LAeq	-11.2	-12.1	-7.6	-5.2	-13.0	-22.8	-31.0
NR 20	**51.0**	**39.0**	**31.0**	**24.0**	**20.0**	**17.0**	**14.0**
Difference NR20	-62.2	-51.1	-38.6	-29.2	-33.0	-39.8	-45.0
Receiver Room Level, dB LA	-1.7						

17.7 This arrangement is predicted to provide an airborne sound insulation performance in the region of 64 dB Rw, and within the NR20 criteria including an error margin of +/- 3dB for RW values.

17.8 The required ceiling construction should consist of the following acoustic material, or similar.

- T & G
- Solid Joist
- Part E compliant ceiling: AcoustiClip Timber Ceiling System Soundproof Kit (Noise reduction, Airborne 64dB & Impact 54dB) consisting of:
- Insulation: DFM acoustic insulation
- Metal AcoustiClip channel
- 15mm soundblock plasterboard
- Noisestop 1 plus panel 18mm, 12,5mm acoustic plasterboard bonded to 5mm/10kg mass loaded vinyl
- Acoustic Sealant
- Standard Suspended ceiling if required

18. Summary

18.1 A ground floor commercial property wishes to operate as a Pizza/chicken restaurant/takeaway (herein referred to as the site) is applying for planning permission to operate their extraction system for their restaurant/takeaway and is required to confirm their external flue complies with external noise guidance. The client has completed a noise assessment at 1258 Uxbridge Road, Hayes, UB4 8JF.

18.2 The primary internal noise source is customers voices and background music within the restaurant on the ground floor. There will be residential dwellings above on the first floor.

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18.5 The associated rating penalties and resultant sound rating levels, dB LAr, are tabulated below:

Rating Penalties, dB, and Sound Rating Levels

NSR	dB L_{As}	Tonality	Impulsivity	Intermittency	dB L_{Ar}
1	48	3	0	0	51
2	51	3	0	0	54

18.6 The lowest daytime background sound level was measured between 20:00-20:15 as 42 dB LA90,15min.

18.7 The noise impact during the daytime is tabulated below:

Noise Impact

NSR	Rating Level, dB L_{Ar}	Difference, dBA	Impact
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2	54	12	**Significant Adverse Impact**

18.8 Significant Adverse Impact has been identified at the NSRs therefore mitigation is required in the form of a silencer to reduce the noise level be at least -17db to be classed as low impact.

Ceiling

18.9 The model by improving the ground floor / first floor partition showed a performance of 64 Rw, this will be adequate in attenuating internal noise transfer and within the NR20 criteria including an error margin of +/- 3dB for RW values.

18.10 The required ceiling construction should consist of the following acoustic material, or similar.

- **T & G**
- **Solid Joist**
- **Part E compliant ceiling: AcoustiClip Timber Ceiling System Soundproof Kit (Noise reduction, Airborne 64dB & Impact 54dB) consisting of:**
- **Insulation: DFM acoustic insulation**
- **Metal AcoustiClip channel**
- **15mm soundblock plasterboard**
- **Noisestop 1 plus panel 18mm, 12,5mm acoustic plasterboard bonded to 5mm/10kg mass loaded vinyl**
- **Acoustic Sealant**
- **Standard Suspended ceiling if required**

18.11 By adhering to the recommended mitigation measures, which will be satisfactory to reduce the noise level below the noise limits required for ceiling noise breakthrough.

19. Uncertainties

19.1 Uncertainty can arise when a calculation method, such as distance correction, is used to determine an overall noise level at an NSR location; however, it is an accepted method when the noise sources are yet to be introduced to the site.

19.2 The monitoring equipment is subject to a 1dB error margin, however calibration before and after measurements allows the drift within the margin to be monitored and thus demonstrates that minimal drift occurred throughout the measurements.

Appendices

APPENDIX A – Extractor, flue and ceiling details

Represented by:
ELTA FANS LTD (BUILDING SERVICES)
Tel: +44 (0)1384 275800 Fax: +44 (0)1384 275810 email: sales@eltafans.co.uk
46 Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands DY6 7US, UK

Technical Data - Fan Model SQU67/450-EC-3 (8.9 speed)

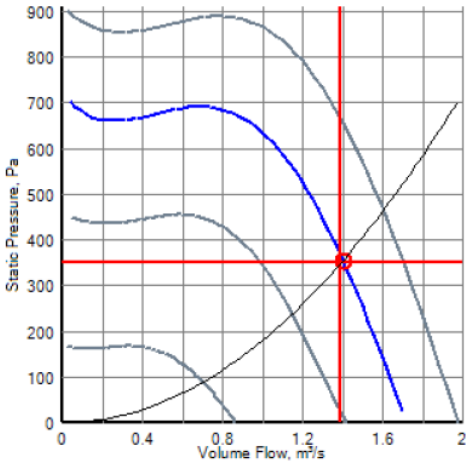
Location: 2024/02852/PA **Designation:** AIR-INLET

Performance - Required

Air Flow :	1.39 m³/s
Static Pressure :	350 Pa
Selection Pressure:	350 Pa
Installation Type:	n/a
Air Density:	1.204 kg/m³
- Atmos. Temp:	20 °C
- Altitude:	0 m
- Humidity:	0.0 %

Actual

Air Flow:	1.40 m³/s
Static Pressure:	355 Pa
Total Pressure:	386 Pa

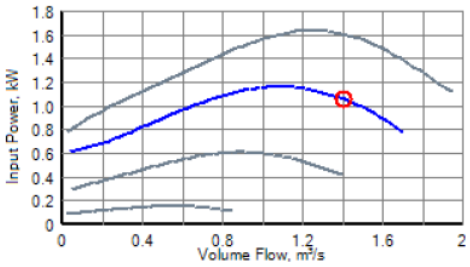


Fan Data

Catalogue Code:	SQU67/450-EC-3 (8.9 speed)		
Description:	Centrifugal Box		
Diameter:	500 mm		
Impeller Type:	Centrifugal		
Blade Material:	-		
Speed:	1606 r/min @50 Hz		
Power, Abs:	-		
Input Power:	1.06 kW	Peak:	-
Efficiency Total:	-		
SFP:	0.76	Static:	-
Fan Weight:	70.0 kg		

Motor Data (at STP)

Motor Type:	
Electrical Supply:	400V 3ph 50Hz
Motor Frame:	80
Motor Power:	1.50kW
FLC/Start (DOL):	2.91A / 2.91A
Motor Speed:	4 pole
Motor Efficiency:	-



Sound Data

Spectrum (Hz):	63	125	250	500	1K	2K	4K	8K	dBW	dB(A) @ 3m
Inlet (dB):	85	83	78	75	69	70	70	66	88	58
Outlet (dB):	88	84	77	77	76	72	71	70	90	60
Breakout (dB):	87	82	70	62	54	46	43	42	88	48

Sound levels are quoted as in-duct values. dB(A) values are average spherical free-field for comparative use only.

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FLANGED SILENCER

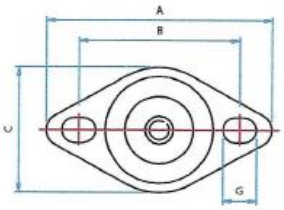
Dynamic Insertion Loss & Pressure Graphs

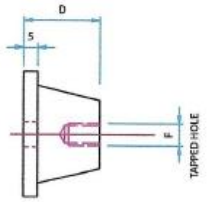
Dynamic Insertion Loss

Fan Size	Silencer Length	Silencer Type	Insertion Loss @ Octave Band (Hz)							
			63	125	250	500	1k	2k	4k	8k
0250	1D	ENP	-2	-5	-6	-9	-13	-11	-6	-6
		EP	-4	-8	-8	-11	-14	-16	-11	-10
	2D	ENP	-4	-7	-10	-15	-19	-16	-12	-9
		EP	-7	-10	-16	-16	-15	-17	-13	-13
0315-0560	1D	ENP	-2	-5	-6	-9	-13	-11	-6	-6
		EP	-4	-8	-8	-11	-16	-10	-17	-14
	2D	ENP	-4	-8	-12	-17	-23	-17	-12	-10
		EP	-7	-10	-12	-21	-26	-26	-24	-22
0630-0800	1D	ENP	-3	-4	-9	-15	-15	-8	-7	-6
		EP	-4	-6	-8	-17	-23	-20	-18	-10
	2D	ENP	-6	-8	-13	-22	-22	-13	-12	-9
		EP	-8	-11	-16	-27	-32	-31	-20	-10
900-1000	1D	ENP	-3	-4	-9	-14	-13	-7	-7	-6
		EP	-4	-6	-11	-20	-18	-16	-13	-11
	2D	ENP	-6	-8	-18	-21	-18	-12	-11	-9
		EP	-8	-11	-18	-26	-27	-26	-22	-16

Revolution SLC - Long Cased Anti-Vibration Mounts

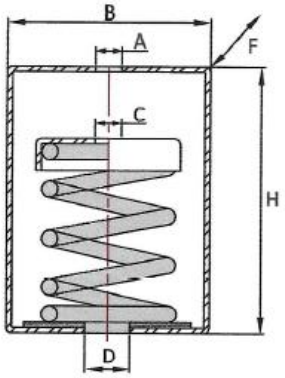
- Fit directly to mounting feet
- Rubber with steel insert
- Supplied as set of 4, complete with fixings





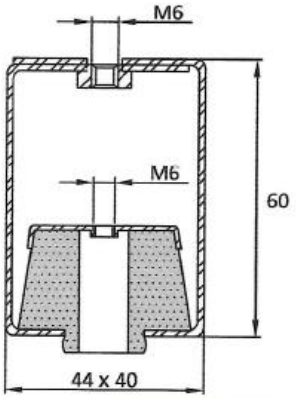
Product Code	A	B	C	D	E	F	G	Weight kg
062-S1G	64	50	43	5.5	20	M6	Ø7	0.040
062-S2	80	57	45	5	32	M8	12 x 9	0.100
062-S2B								0.100
062-S2Y								0.102
062-S3B	95	71	60	5	45	M10	14 x 9	0.104

Hangers



MACHINERY MOUNTINGS

Part No	B	F	H	A	D	C	Defl. mm	Max Kg
TM 25	75	55	100	12	30	11	24	25
TM 50	75	55	100	12	30	11	24	50
TM 75	75	55	100	12	30	11	24	75
TM 100	75	55	100	12	30	11	24	100
TM 150	120	75	155	16	16	14	35	150
TM 250	120	75	155	16	16	14	35	250
TM 350	120	75	155	16	16	14	35	350



Part No	Min kg	Max Kg
TVAR 40	8	25
TVAR 60	18	50
TVAR 75	25	75

Max compression load in Kg deflection in mm.
This information is for guidance only. Customers are recommended to contact us for further technical information on products and applications.
We reserve the right to alter specifications or withdraw products without notice.

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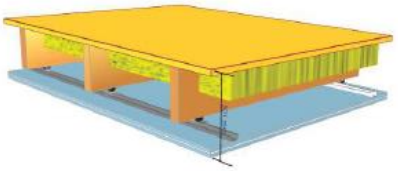
Sound Insulation Prediction (v9.0.22)

Program copyright Marshall Day Acoustics 2017
Margin of error is generally within Rw ±3 dB
Noisestop Systems - Key No. 6502
Job Name: AcoustiClip Timber Ceiling System
Job No.: Initials:MC
Date:04/06/2024
File Name:

Notes:



Rw 67 dB
C -2 dB
Ctr 6 dB

Mass-air-mass resonant frequency = =31 Hz

Panel Size = 2.7 m x 4.0 m

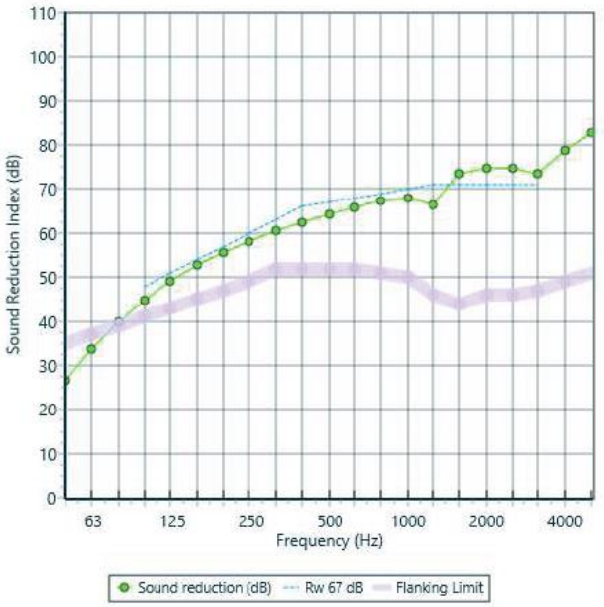
Partition surface mass = 58.6 kg/m²

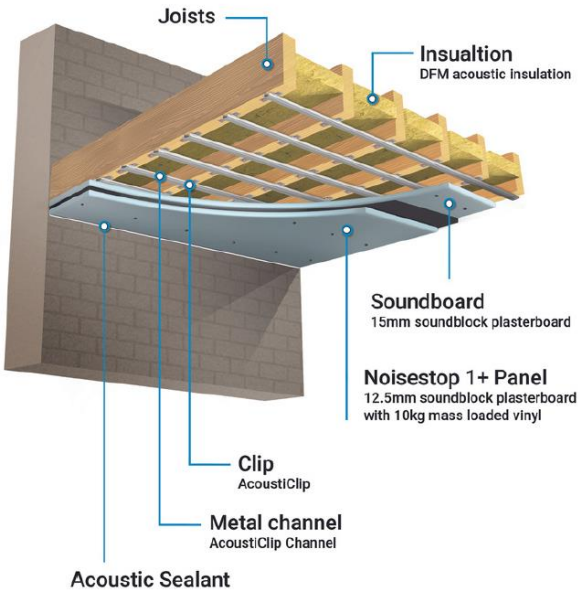
System description

Panel 1 : 1 x 22 mm Flooring Particle Board (ρ:710 kg/m3,E:3.4GPa,η:0.03, ρs:15.6 kg/m², fc:1344 Hz)

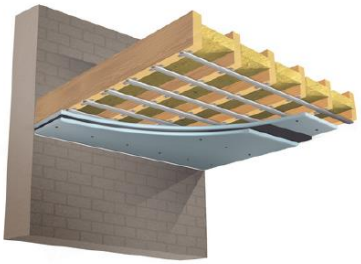
Frame: Solid Joist with rubber isolation clip (2E2 mm x 45 mm), Stud spacing 600 mm , Cavity Width 247 mm , 1 x Rockwool (60kg/m3) Thickness 100 mm ...
Panel 2 : 1 x 15 mm Siniat GTEC dB Board 15mm + 1 x 5 mm ass loaded vinyl
+ 1 x 12.5 mm Siniat GTEC dB Board 12.5mm (ρ:880 kg/m3,E:3.3GPa,η:0.01, ρs:11 kg/m², fc:2680 Hz)

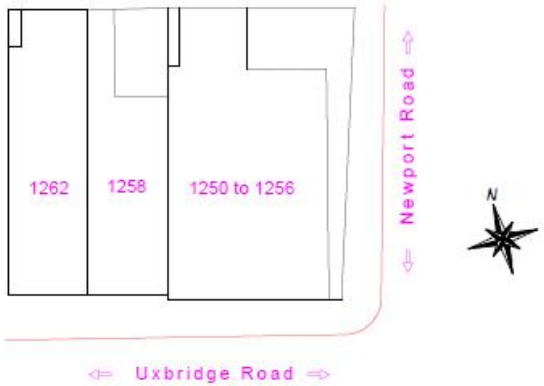
freq.(Hz)	R(dB)	R(dB)
50	27	
63	34	30
80	40	
100	45	
125	49	48
160	53	
200	56	
250	58	58
315	60	
400	62	
500	64	64
630	66	
800	67	
1000	68	67
1250	67	
1600	74	
2000	75	74
2500	75	
3150	74	
4000	79	77
5000	83	





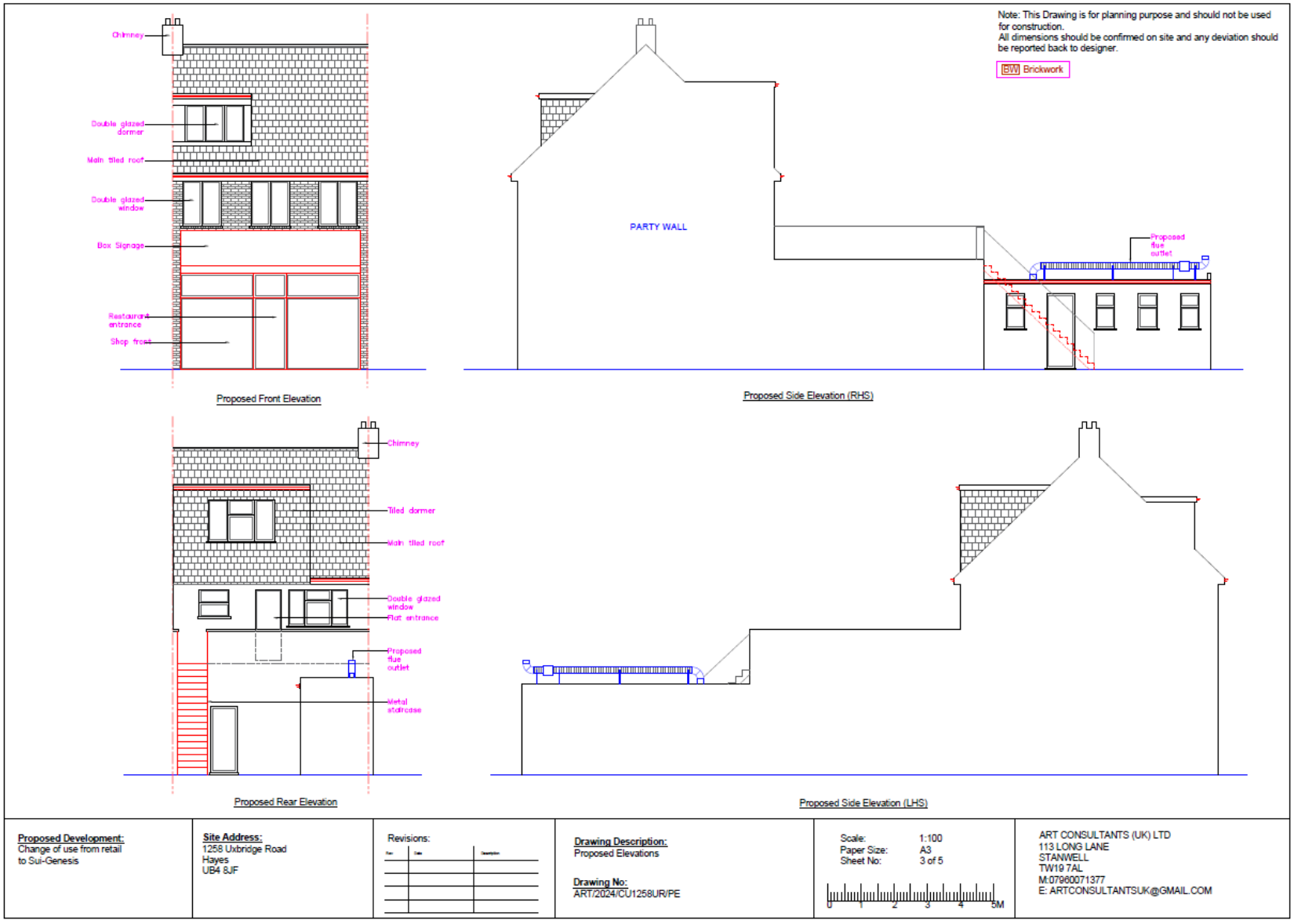
Noise Reduction
Airborne 64dB
Impact 54dB

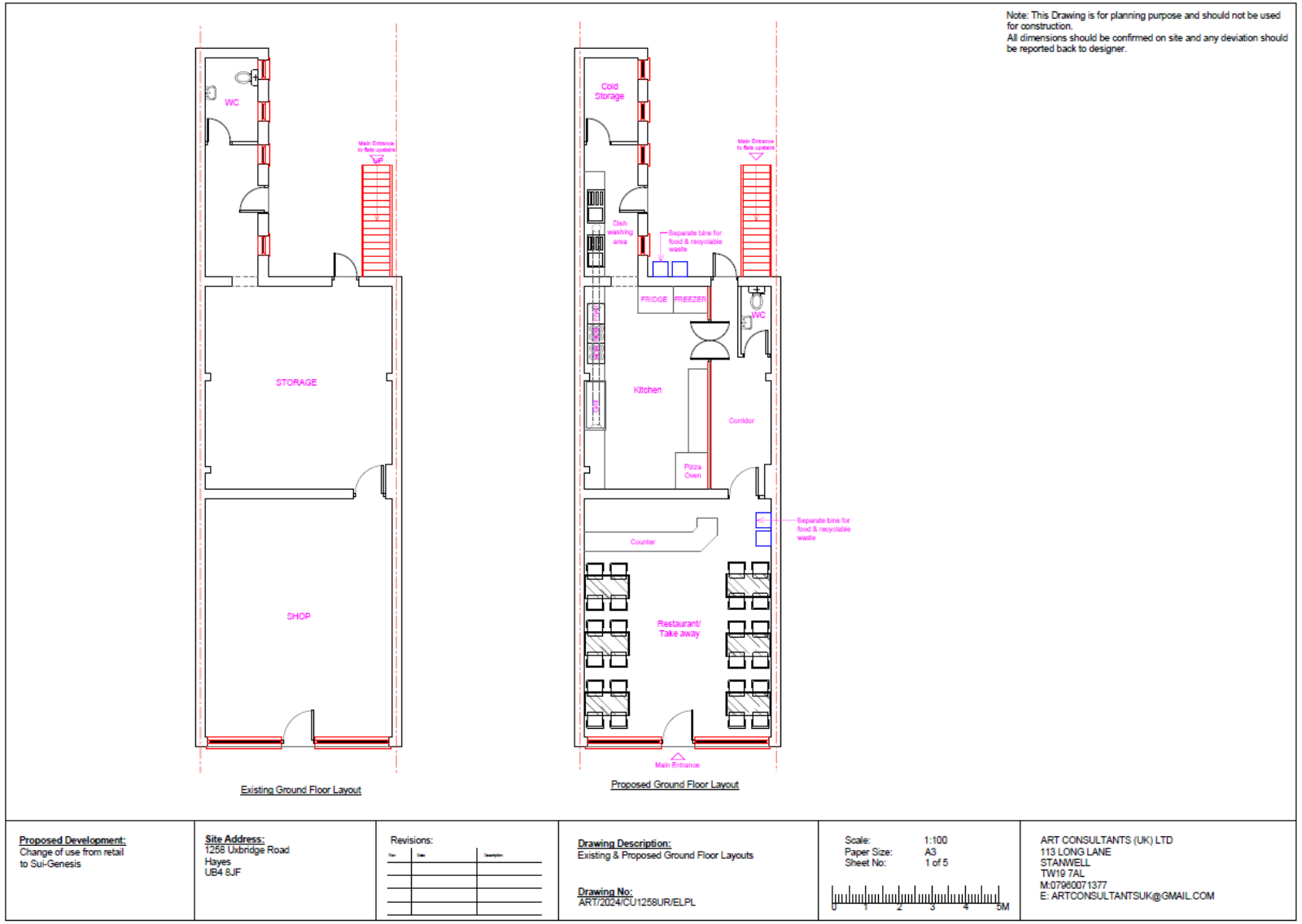




Site Plan @ Scale 1:500

Location Plan @ 1:1250


Note: This Drawing is for planning purpose and should not be used for construction.
All dimensions should be confirmed on site and any deviation should be reported back to designer.
BW Brickwork
Chimney
Double glazed dormer
Main tiled roof
Double glazed window
Box Signage
Restaurant entrance
Shop front
Proposed Front Elevation
PARTY WALL
Proposed flue outlet
Proposed Side Elevation (RHS)
Chimney
Tiled dormer
Main tiled roof
Double glazed window
Flat entrance
Proposed flue outlet
Metal staircase
Proposed Rear Elevation
Proposed Side Elevation (LHS)
Proposed Development:
Change of use from retail to Sui-Genesis
Site Address:
1258 Uxbridge Road
Hayes
UB4 8JF
Revisions:
Drawing Description:
Proposed Elevations
Drawing No:
ART/2024/CU1258UR/PE
Scale: 1:100
Paper Size: A3
Sheet No: 3 of 5
0 1 2 3 4 5M
ART CONSULTANTS (UK) LTD
113 LONG LANE
STANWELL
TW19 7AL
M:07960071377
E: ARTCONSULTANTSUK@GMAIL.COM


Note: This Drawing is for planning purpose and should not be used for construction.
All dimensions should be confirmed on site and any deviation should be reported back to designer.
WC
Main Entrance to flats upstairs
STORAGE
SHOP
Existing Ground Floor Layout
Cold Storage
Main Entrance to flats upstairs
Dish washing area
Separate bins for food & recyclable waste
FRIDGE
FREEZER
WC
SINK
Kitchen
Corridor
Pizza Oven
Separate bins for food & recyclable waste
Counter
Restaurant/ Take away
Main Entrance
Proposed Ground Floor Layout
Proposed Development:
Change of use from retail to Sui-Genesis
Site Address:
1258 Uxbridge Road
Hayes
UB4 8JF
Revisions:
Drawing Description:
Existing & Proposed Ground Floor Layouts
Drawing No:
ART/2024/CU1258UR/ELPL
Scale: 1:100
Paper Size: A3
Sheet No: 1 of 5
0 1 2 3 4 5M
ART CONSULTANTS (UK) LTD
113 LONG LANE
STANWELL
TW19 7AL
M:07960071377
E: ARTCONSULTANTSUK@GMAIL.COM

APPENDIX B - Measurement Details

Measurement	Start Date	Start Time	End Date	End Time
M1	10/10/24	10:30	11/10/24	09:00

APPENDIX C - Equipment Details

Equipment	Make	Model	Class	Serial Number
Sound Meter	Pulsar	N45	1	1425
Calibrator	Pulsar	PM1	1	011254A

APPENDIX D - Calibration Details

Measurement	Calibrator Ref Level (dB)	Level Before (dB)	Deviation Before (dB)	Level After (dB)	Deviation After (dB)
M1	94.0	94.0	0	94.0	0

APPENDIX E - Meteorology Details

Date	Temp C	Wind Speed m/s	Wind Direction	Humidity %	Precipitation mm	Cloud Cover (Oktas)
10/10/24	15	1.3	s	84	0.0	4/8

APPENDIX F - Noise Attenuation

Utilising Measured Levels

Equipment	Measured noise, dB LpA	r_1 , m	r_2 , m	Barrier	Level at NSR_2
Extractor flue	60	7	3.0	- 5	48 (NSR1)
		8	3.0	-	51 (NSR2)

Barrier attenuation assumed as 5 dB and 10 dB for the partial and complete blockage of the line of sight respectively between source and receiver as per 'BS5228-1:2009 – Noise and vibration control on construction and open sites' pg. 130.

Point source distance attenuation

$$L_y = 20 \times \log \frac{r_1}{r_2}$$

Where L_y is the distance attenuation factor and $r_{1,2}$ are the source -> measurement distance and source -> NSR distance in metres respectively

APPENDIX G – Terminology and Definitions

Noise
Sound only becomes noise (often defined as 'unwanted sound' or sound that is considered undesirable or disruptive) when it causes or contributes to some harmful or otherwise unwanted effect, like annoyance or sleep disturbance.

Acoustic Environment
Sound from all sound sources as modified by the environment.

Equivalent continuous A-weighted sound pressure level LAeq,T
Value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval T, has the same mean square sound pressure as a sound under consideration whose level varies with time.

A-weighting
The human ear is most sensitive to frequencies in the range 1 kHz to 5 kHz. On each side of this range the sensitivity falls off. A-weighting is used in sound level meters to replicate this sensitivity and respond in the same way as the human ear.

Octave Band
Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit.

Maximum Sound Pressure Level LAmax,T
Highest value of the A-weighted sound pressure level with a specified time weighting that occurs during a given event or measuring period.

The LA10,T Sound Level
The A-weighted sound pressure that is exceeded for 10% of a given time interval, T. It is often used to evaluate road traffic noise.

The LA90,T Sound Level
The A-weighted sound pressure that is exceeded for 90% of a given time interval, T, measured using time weighting F. It is often referred to as the background noise level and which might in part be an indication of relative quietness at a given location

Free-field Level
The sound pressure level away from reflecting surfaces.
NOTE Measurements made 1.2 m to 1.5 m above the ground and at least 3.5 m away from other reflecting surfaces are usually regarded as free-field. To minimize the effect of reflections the

measuring position has to be at least 3.5 m to the side of the reflecting surface (i.e. not 3.5 m from the reflecting surface in the direction of the source).

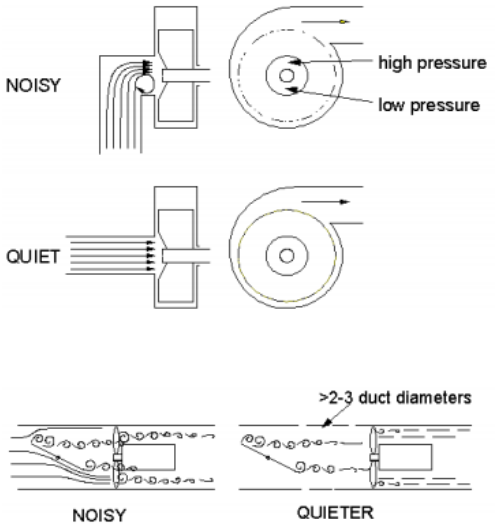
Façade Level
The sound pressure level 1 m in front of the façade.
NOTE Facade level measurements of LpA are typically 1 dB to 2 dB higher than corresponding free-field measurements because of the reflection from the facade.

Indoor Ambient Noise
Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants.

APPENDIX H – Noise Control Technique Examples

FAN INSTALLATIONS

Typical applications Axial flow or centrifugal fans. Technique Maximum fan efficiency coincides precisely with minimum noise. Any fan installation feature that tends to reduce fan efficiency is therefore likely to increase noise. Two of the most common examples are bends close to the fan (intake side in particular) and dampers (close to the fan intake or exhaust).



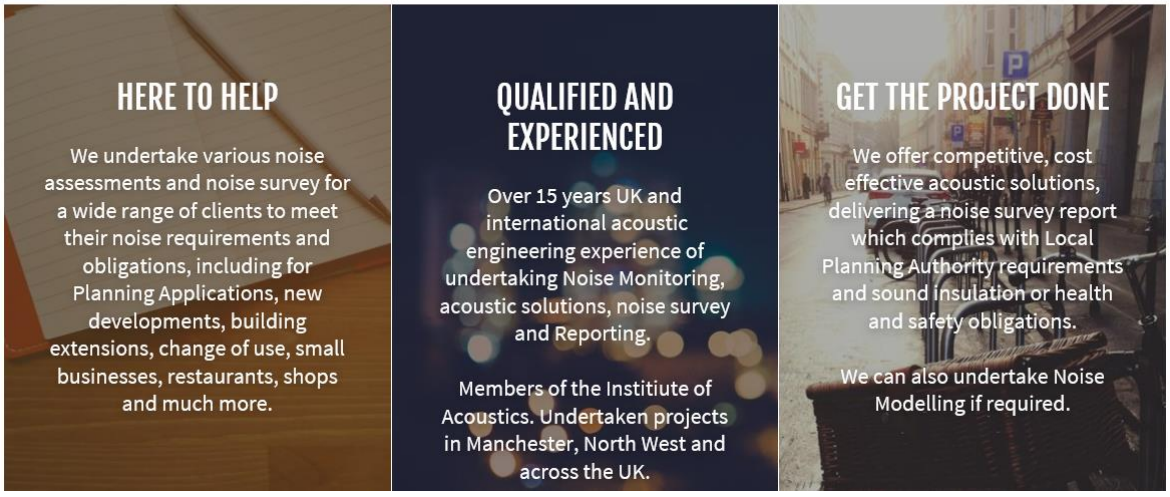
Ideally, for maximum fan efficiency and minimum noise, make sure there is at least 2 - 3 duct diameters of straight duct between any feature that may disturb the flow and the fan itself. Noise reductions of 3 - 12 dB are often possible.

DUCTWORK

Typical applications Extraction, ventilation, cooling, openings in walls and enclosures. Technique Instead of fitting silencers, it is often possible to achieve a 10 - 20 dB reduction in airborne noise from a duct or opening by lining the last bend in the ductwork with acoustic absorbent (foam or rockwool / fibreglass). Alternatively, construct a simple absorbent lined right-angled bend to fit on the opening. Ideally, either side of the bend should be lined along a length equivalent to twice the duct diameter. Where flow velocities are high (> 3m/s), consider using cloth faced absorbent.

ABOUT US


sky
As seen on
Channel 185, Discover Britain


HERE TO HELP
We undertake various noise assessments and noise survey for a wide range of clients to meet their noise requirements and obligations, including for Planning Applications, new developments, building extensions, change of use, small businesses, restaurants, shops and much more.
QUALIFIED AND EXPERIENCED
Over 15 years UK and international acoustic engineering experience of undertaking Noise Monitoring, acoustic solutions, noise survey and Reporting.
Members of the Instituite of Acoustics. Undertaken projects in Manchester, North West and across the UK.
GET THE PROJECT DONE
We offer competitive, cost effective acoustic solutions, delivering a noise survey report which complies with Local Planning Authority requirements and sound insulation or health and safety obligations.
We can also undertake Noise Modelling if required.