



Noise Impact Assessment

Site Address: The Dandy Highwayman Café, Main Road, Cherhill, Calne, SN11 8UU

Client Name: Mr. Mark Wilkins

Project Reference: NP-013957



Authorisation and Version Control

Revision	Reported By	Checked By
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Amendment History

Revision	Date	Summary of Amendments
01	31/03/2026	--
02	28/04/2026	Extraction system noise emissions included.

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Delivering sustainable development by promoting good health and well-being through effective management of noise.

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1. Introduction

NOVA Acoustics Ltd has been commissioned to prepare a noise impact assessment for the installation of plant equipment ('the Proposed Development') at The Dandy Highwayman Café, Main Road, Cherhill, Calne, SN11 8UU ('the Site').

The applicant has submitted a conditionally approved planning application for the development (ref. PL/2022/07611, 'the application') to the Local Planning Authority ('LPA'), Wiltshire Council. The application is titled as follows:

"Proposed siting of original 1940s Vintage Dining Car and associated works including extension and alterations to existing café"

This report is intended to accompany the application.

A noise survey has been undertaken to establish the prevailing sound levels at the closest noise-sensitive receptors ('NSRs'). This report details the existing background sound climate and the predicted noise emissions associated with the proposed external fixed plant. Measures required to mitigate noise impacts have been recommended where necessary and are assessed in accordance with the relevant performance standards, legislation, policy and guidance.

This noise assessment is necessarily technical in nature; therefore, a glossary of terms is included in Appendix A to assist the reader.

1.1 Standards, Legislation, Policy & Guidance

The following performance standards, legislation, policy and guidance have been considered to ensure good acoustic design in the assessment:

- The requirements of Condition 7 of the approved planning application
- National Planning Policy Framework (2024)
- Noise Policy Statement for England (2010)
- BS4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

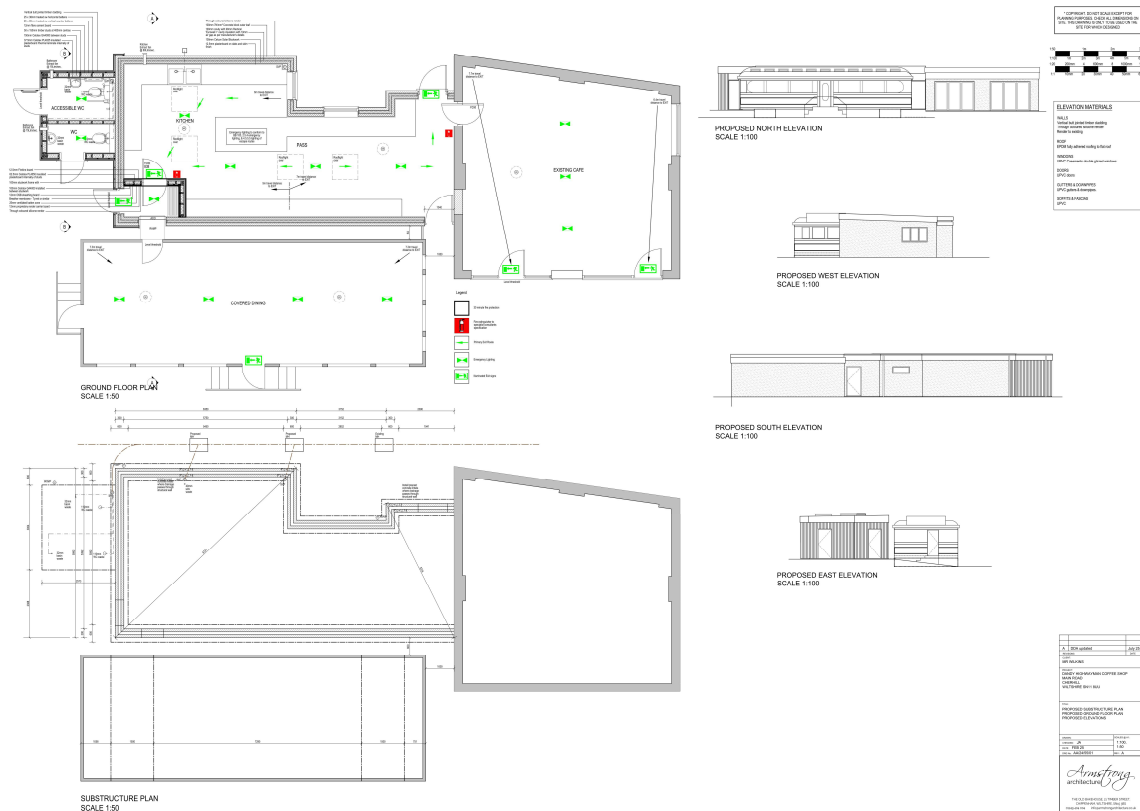
Further information regarding the legislation can be found in Appendix B.

1.2 Proposal Brief and History

The proposal relates to the continued use of the site as a café. Prior to the café use, the site was used as a petrol filling station and commercial car garage. The development is not classed as "major" within the terms of Article 2 of the Town and Country Planning [Development Management Procedure (England) Order 2015], nor does the site lie within a conservation area. The proposal includes physical alterations to extend and convert the existing building to improve the overall offer at the café.

Regarding fixed plant, it is intended that a new kitchen extract system (Systemair MUB 042 500 E4 fan), and a Mitsubishi condenser unit will be installed on the roof of the kitchen building.

The site plan for the development is shown overleaf.



Drawing Ref "AA/24/55/01" by "Armstrong Architecture"

Figure 1 – Proposed Site Plan

1.3 Local Planning Authority & Background

Condition 7 of the approved planning application is reproduced below:

"No new ventilation, extraction or air conditioning plant/machinery shall be installed anywhere at the site until a scheme of acoustic insulation and noise control has been submitted to and approved in writing by the Local Planning Authority. The scheme should specify the acoustic insulation and other measures to be put in place to prevent and control the emission of noise from the development including noise from the kitchen extraction system. The approved scheme shall be implemented in full before the use commences and maintained at all times thereafter. In discharging this condition, the applicant should engage an Acoustic Consultant. The consultant should carry out a thorough background noise survey and noise assessment in accordance with BS4142:1997 (or any subsequent version) and demonstrate that the rating noise level at the nearest residential property is not above the background noise level.

REASON: In order to safeguard the amenities of the area in which the development is located."

2. Environmental Noise Survey

2.1 Measurement Methodology

An environmental noise survey was undertaken at the site to define the acoustic environment. The measurement dates and particulars are outlined in the following table. Full details regarding the equipment used and the weather conditions recorded during the survey can be found in Appendix D.

Location	Survey Dates	Measurement Particulars
MP1	09/03/26 – 11/03/26	Equipment attached to a tripod adjacent to the existing building, fully shielded from road traffic noise. The microphone was positioned approximately 1.5m from the ground and 1.5m from the building façade. A -3dB correction has been applied to the data to account for façade reflections.
ST1	09/03/26: 09:50 – 10:30	Short-term attended measurement taken adjacent to the A4 Road (Main Road). The microphone was positioned approximately 1.5m from the ground in free-field conditions.

Table 1 – Measurement Methodology

The site surroundings and measurement locations are shown in the figure below:



Imagery ©2026 Airbus, Imagery ©2026 Airbus, Maxar Technologies, Map data ©2026

Figure 2 – Measurement Locations and Site Surroundings

2.2 Context & Subjective Impression

The area surrounding the site is predominantly residential to the north with open farmland to the south, east and west. The acoustic environment is low to moderate in level and is significantly dominated by

traffic noise from the A4 Road (Main Road). During the site visits, intermittent distant aircraft flyovers also contributed to the ambient sound levels but were generally secondary in nature. Other noise was from non-anthropogenic sources, such as birdsong and the rustling of foliage.

A school is located to the north of the site (Cherhill CE Primary School), and it is expected that noise levels in the area would increase significantly during drop off/collection times.

2.3 Environmental Noise Survey Results

The ranges and distributions of background noise levels measured during the long-term unattended survey are shown in the histogram graphs below. Full time history graphs can be found in Appendix D.

Whilst it is assumed that all plant will generally run during the operational hours of the café exclusively, it is possible that it will also need to function during the night-time to allow for defrost cycles, etc. As such, background noise levels are shown for the full daytime and night-time periods.

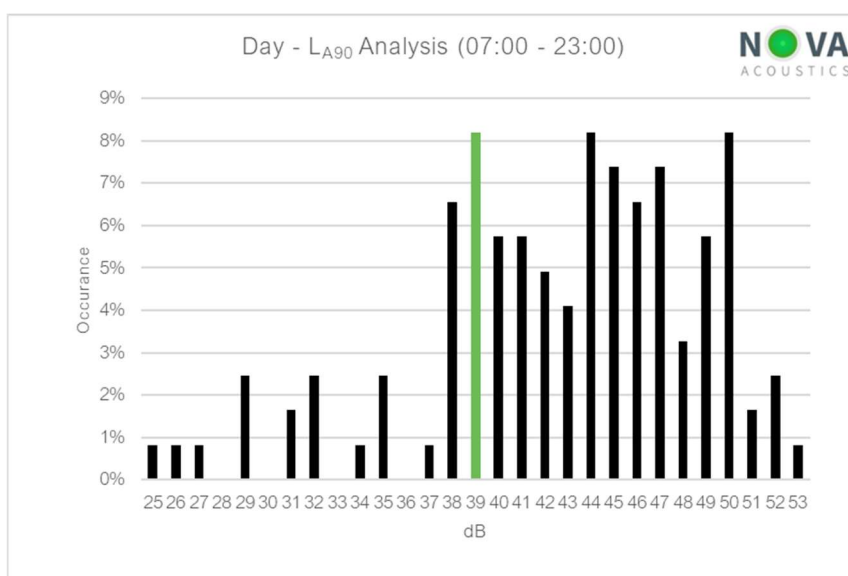


Figure 3 – Daytime Background Sound Level Histogram

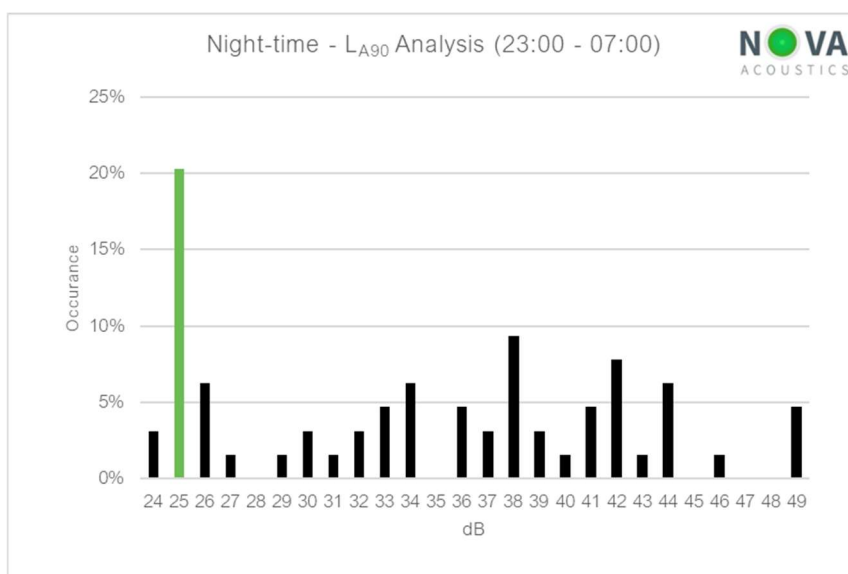


Figure 4 – Night-time Background Sound Level Histogram

As can be seen, the 'lowest typical' background sound levels measured at MP1 were **39dBA** during the day and **25dBA** during the night. These are thought to be representative of the background noise environment at NSRs to the southwest and east (NSRs 1 and 3 respectively). The background noise levels measured at the short-term attended monitoring location (ST1) were approximately 10dB higher, due to the proximity of the A4 road. As such, any noise impact at NSR2 would be expected to be lower than at other NSRs.

It should be noted that the night-time background noise measurement of 25dBA is very low, and under such circumstances, the following is stated in BS4142:

"...the absolute sound levels may be as, or more, relevant than the margin by which the rating sound level exceeds the background sound level; this is particularly true at night."

Consequently, it is thought that it is more appropriate in this situation to apply an absolute criterion to the night-time assessment, rather than to assess against the background noise level.

It is thought that outdoor amenity areas are unlikely to be used during the night; therefore, the primary concern is achieving suitable internal levels within the bedrooms. It is stated in BS8233 that internal ambient noise levels within bedrooms should not exceed 30dB $L_{Aeq,8h}$ in order to avoid sleep disturbance. Therefore, it is considered that a noise limit of **33dBA** outside the nearest bedroom window is reasonable, as this would ensure that internal noise levels do not exceed **20dBA** (10dB below the required threshold). At this level, noise from the plant unit is unlikely to be audible against the prevailing noise climate within the rooms themselves.

Further to the above, it is also recommended that internal noise levels do not exceed the Moorhouse Curve criteria in the 63Hz and 125Hz octave bands (47dB and 41dB respectively). This should ensure that the risk of annoyance due to low-frequency noise is also adequately controlled.

Whilst it is noted that the BS8233 criterion is based upon anonymous transport sources, it is unlikely that any acoustic features would be perceptible within the NSR bedrooms at this level. Nonetheless, good acoustic design should still be implemented to reduce the likelihood of any tonality, intermittency and any other features not described.

3. Plant Noise Impact Assessment

In the following section, the noise emissions from the proposed extraction system and air conditioning unit are assessed.

The 1/1 octave band sound power levels for the plant systems are shown in the table below. The manufacturer's datasheets can be found in Appendix E.

Description	1/1 Octave Frequency Band (L _w , Hz, dB)								Overall (L _w , dBA)
	63	125	250	500	1k	2k	4k	8k	
1no. Mitsubishi PUZ-M140VKA2	79	77	71	68	67	62	57	49	71
Systemair MUB 042 500 E4 Outlet	74	83	79	78	79	77	74	67	84
Systemair MUB 042 500 E4 Breakout	52	63	53	46	49	50	40	31	55

Table 2 – Sound Power Levels of Plant

It is specified that an Acoustica R02-5 / 585 X 585 silencer will be installed at the outlet of the extract ducting. The silencer insertion loss values are shown in the table below.

Description	1/1 Octave Frequency Band (Hz, dB)							
	63	125	250	500	1k	2k	4k	8k
Acoustica R02-5 / 585 X 585 Silencer Insertion Loss	4	6	12	26	30	31	22	16

Table 3 – Extraction Outlet Insertion Loss Values

3.1 BS4142 Noise Impact Assessment

The BS4142 assessment at the most affected NSRs is presented in the following table. The assessment is carried out using the night-time threshold defined in section 2 as this is the most stringent criterion. Provided low impact is achieved during the night, it should inherently also be achieved during the day.

The following factors have been considered:

- The air conditioning unit and extraction system outlet duct will be a minimum of **40m** from the façades of the most affected receptors (both NSR1 and NSR2).
- There is no acoustic shielding between the plant and the receptors.
- The unit and duct outlet will be installed on top of the kitchen roof against 1no. reflective plane.

Description	1/1 Octave Frequency Band (Hz, dB)								Overall (dBA)
	63	125	250	500	1k	2k	4k	8k	
1no. Mitsubishi PUZ-M140VKA2 (L _w)	79	77	71	68	67	62	57	49	71
Systemair MUB 042 500 E4 Breakout (L _w)	52	63	53	46	49	50	40	31	55
Systemair MUB 042 500 E4 Outlet (L _w) ^[1]	70	77	67	52	49	46	52	51	64
Cumulative Sound Power Level (L _w)	79	80	72	68	67	62	58	53	72
Propagation Loss (40m, Q2)	-40								--
Specific Sound Level at NSR1	39	40	32	28	27	22	18	13	32
Acoustic Feature Correction	At this level, acoustic features, such as impulsivity and tonality are expected to be inaudible within the NSR properties. As such, no penalties are applicable.								0
Rating Sound Level (L _{Af,Tr})	Specific sound level plus applicable penalties.								32
Proposed Threshold	Absolute criterion.								33
Exceedance	Rating level minus absolute criterion.								-1
BS4142 Assessment Outcome	Low impact, dependent on context.								
NPPF & NPSE Outcome	No Observed Adverse Effect Level (NOAEL).								
Mitigation measures are not required.									

Notes:

[1] Sound power level with silencer installed. To provide a worst-case prediction, no corrections are applied to account for the end reflection of the duct outlet.

Table 4 – Calculations & BS4142 Noise Impact Assessment – NSR1 & NSR2 – Night-time

Discussion

As can be seen, the rating noise level is not predicted to exceed the proposed absolute criterion at the most affected NSRs. This is classed as 'low impact' when assessed with BS4142, which equates to 'No Observed Adverse Effect Level' ('NOAEL') when assessed with the NPSE and NPPF. Further to this, the low-frequency noise emissions (63Hz and 125Hz octave bands) are below the Moorhouse Curve thresholds of 47dB and 41dB respectively. This suggests that there would be a low level of risk of subjective annoyance due to low-frequency noise.

4. Conclusion

The proposed development has been assessed against the requirements of BS4142 and the conditional planning approval from the LPA. Providing the assumptions used in the calculations are correct, the noise emissions from the proposed plant unit are not expected to exceed the proposed threshold criterion. This is classed as 'low impact' when assessed with BS4142, which equates to 'No Observed Adverse Effect Level' ('NOAEL') when assessed with the NPSE and NPPF.

The following 'Action Plan' is outlined to ensure the design considerations and specifications from this report are duly implemented:

1. The proposed air conditioning unit and extraction fan outlet should be located on the roof at a minimum distance of **40m** from the façades of the closest receptors.
2. The makes and models of system elements should not be altered. If changes are required, then further assessment should be undertaken.
3. The unit and duct outlet should be installed against 1no. reflective plane only (the roof) and should not be installed against any walls or balustrades.

The findings of this report will require written approval from the Local Authority prior to the discharge of Condition 7.

Appendix A – Acoustic Terminology

A-weighted sound pressure level, L_{pA}	Quantity of A-weighted sound pressure given by the following formula in decibels (dBA). $L_{pA} = 10 \log_{10} (pA/p_0)^2$. Where: pA is the A-weighted sound pressure in pascals (Pa) and p_0 is the reference sound pressure (20 μ Pa)
Background Sound	Underlying level of sound over a period, T , which might in part be an indication of relative quietness at a given location
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound that, within a specified time interval, T , has the same mean-squared sound pressure as the sound under consideration that varies with time
Facade level	Sound pressure level 1 m in front of the facade
Free-field level	Sound pressure level away from reflecting surfaces
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
Noise Criteria	Numerical indices used to define design goals in a given space
Noise Rating (NR)	Graphical method for rating a noise by comparing the noise spectrum with a family of noise rating curves
Octave Band	Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit
Percentile Level, $L_{AN,T}$	A-weighted sound pressure level obtained using time-weighting “F”, which is exceeded for $N\%$ of a specified time interval
Rating Level, $L_{Ar,Tr}$	Equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise
Reverberation time, T	Time that would be required for the sound pressure level to decrease by 60 dB after the sound source has stopped
Sound Pressure, p	root-mean-square value of the variation in air pressure, measured in pascals (Pa) above and below atmospheric pressure, caused by the sound
Sound Pressure Level, L_p	Quantity of sound pressure, in decibels (dB), given by the formula: $L_p = 10 \log_{10} (p/p_0)^2$. Where: p is the root-mean-square sound pressure in pascals (Pa) and p_0 is the reference sound pressure (20 μ Pa)
Weighted sound reduction index, R_w	Single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies

Appendix B – Standards, Legislation, Policy, and Guidance

This report is to be primarily based on the following standards, legislation, policy and guidance.

B.1 – National Planning Policy Framework (2024)

Government policy on noise is set out in the National Planning Policy Framework (NPPF), published in 2024. This replaced all earlier guidance on noise and places an emphasis on sustainability. In section 15, Conserving and enhancing the natural and local environment, paragraph 187e, it states:

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. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;

Paragraph 198 states:

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 impact 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.*

B.2 – Noise Policy Statement for England (2010)

Paragraph 198 of the NPPF also refers to advice on adverse effects of noise given in the Noise Policy Statement for England (NPSE). This document sets out a policy vision to:

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

To achieve this vision the Statement identifies the following three aims:

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

In achieving these aims the document introduces significance criteria as follows:

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur. It is stated that “significant adverse effects on health and quality of life should be avoided while also considering the guiding principles of sustainable development”.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected. It is stated that the second aim above lies somewhere between LOAEL and SOAEL and requires that: “all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also considering the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur.”

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. This can be related to the third aim above, which seeks: “where possible, positively to improve health and quality of life through the pro-active management of noise while also considering the guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim.”

This is further expanded using the updated “Noise Exposure Hierarchy Table” which includes an additional level of impact referred to as the ‘No Observed Adverse Effect Level’ (‘NOAEL’). It is stated that at this level: “noise can be heard, but does not cause any change in behaviour, attitude or other physiological response”. In addition, noise at this level “can slightly affect the acoustic character of the area but not such that there is a change in the quality of life”.

The NPSE recognises that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations and provides no guidance as to how these criteria should be interpreted. It is clear, however, that there is no requirement to achieve noise levels where there are no observable adverse impacts but that reasonable and practicable steps to reduce adverse noise impacts should be taken in the context of sustainable development and ensure a balance between noise sensitive and the need for noise generating developments.

Any scheme of noise mitigation outlined in this report will, therefore, aim to abide by the above principles of the NPPF and NPSE whilst recognizing the constraints of the site.

B.3 – BS4142:2014+A1:2019 – ‘Methods for rating and assessing industrial and commercial sound’

Overview

BS4142:2014 sets out a method to assess the likely effect of sound from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises, on people who might be inside or outside a dwelling or premises used for residential purposes in the vicinity.

The procedure contained in BS4142:2014 for assessing the effect of sound on residential receptors is to compare the measured or predicted sound level from the source in question, the $L_{Aeq,T}$ 'specific sound level', immediately outside the dwelling with the $L_{A90,T}$ background sound level.

Where the sound contains a tonality, impulsivity, intermittency and other sound characteristics, then a correction depending on the grade of the aforementioned characteristics of the sound is added to the specific sound level to obtain the $L_{A,r}$ 'rating sound level'. A correction to include the consideration of a level of uncertainty in sound measurements, data and calculations can also be applied when necessary.

Rating Penalty

Section 9 of BS4142:2014 describes how the rating sound level should be derived from the specific sound level, by deriving a rating penalty.

BS4142:2014 states:

"Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level. Where such features are present at the assessment location, add a character correction to the specific sound level to obtain the rating level. This can be approached in three ways:

- a) subjective method;*
- b) objective method for tonality;*
- c) reference method."*

Due to the nature of the development the subjective method has been adopted to derive the rating sound level from the specific sound level. This is discussed in Section 9.2 of BS4142:2014, which states:

"Where appropriate, establish a rating penalty for sound based on a subjective assessment of its characteristics. This would also be appropriate where a new source cannot be measured because it is only proposed at that time, but the characteristics of similar sources can subjectively be assessed. Correct the specific sound level if a tone, impulse or other characteristics occurs, or is expected to be present, for new or modified sound sources."

BS4142:2014 defines four characteristics that should be considered when deriving a rating penalty, namely; tonality; impulsivity; intermittency; and other sound characteristics, which are defined as:

a) Tonality

A rating penalty of +2 dB is applicable for a tone which is "just perceptible", +4 dB where a tone is "clearly perceptible", and +6 dB where a tone is "highly perceptible".

b) Impulsivity

A rating penalty of +3 dB is applicable for impulsivity which is "just perceptible", +6 dB where it is "clearly perceptible", and +9 dB where it is "highly perceptible".

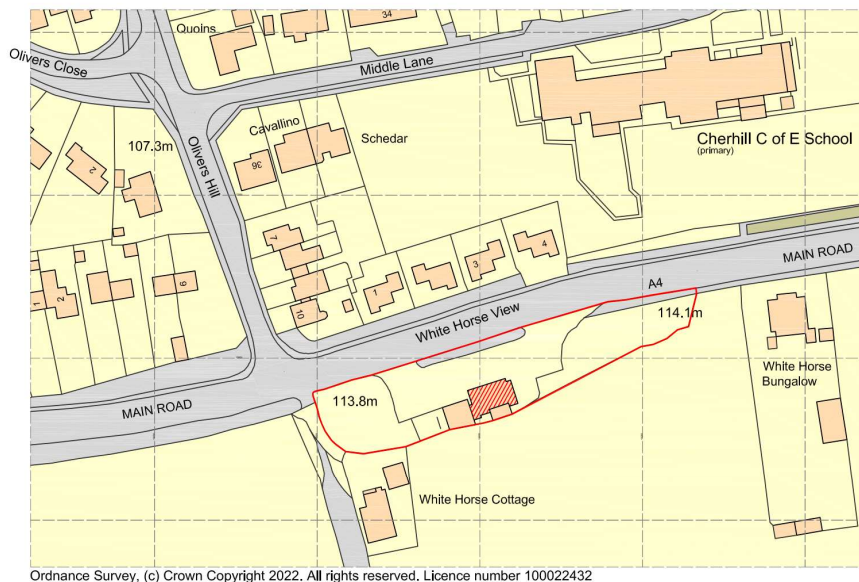
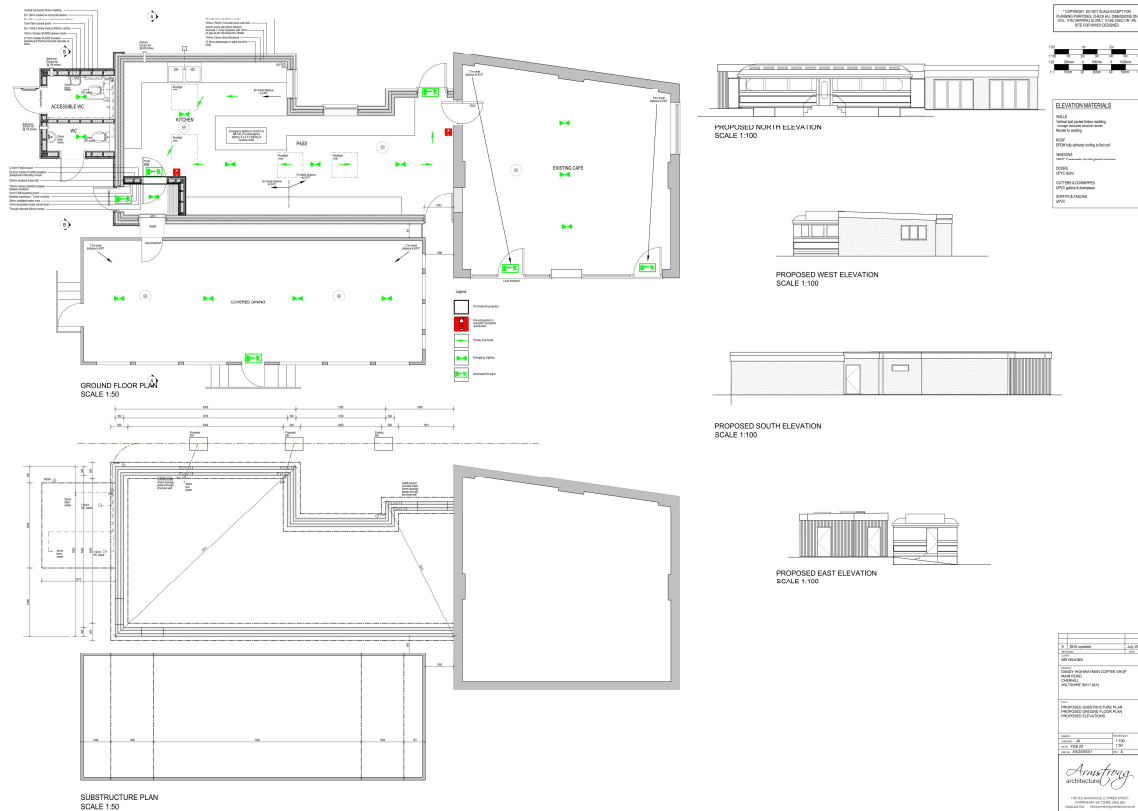
c) Other Sound Characteristics

BS4142:2014 states that where "the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distance against the residual acoustic environment, a penalty of +3 dB can be applied."

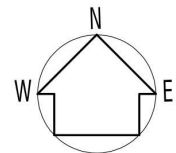
d) *Intermittency*

BS4142:2014 states that when the “specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time ... if the intermittency is readily distinctive against the residual acoustic environment, a penalty of +3 dB can be applied.”

Appendix C – Site and Location Plans



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REVISIONS:

PROJECT:
CAFE SITE
MAIN ROAD, CHERHILL
SCALE:
1:1250 @ A4

DRAWING:
LOCATION PLAN
AS PROPOSED
DRAWN:
B.K.

DRAWING NUMBER:
1012:P:04
DATE:
JUNE 2022

Appendix D – Environmental Survey

D.1 – Time History Noise Data

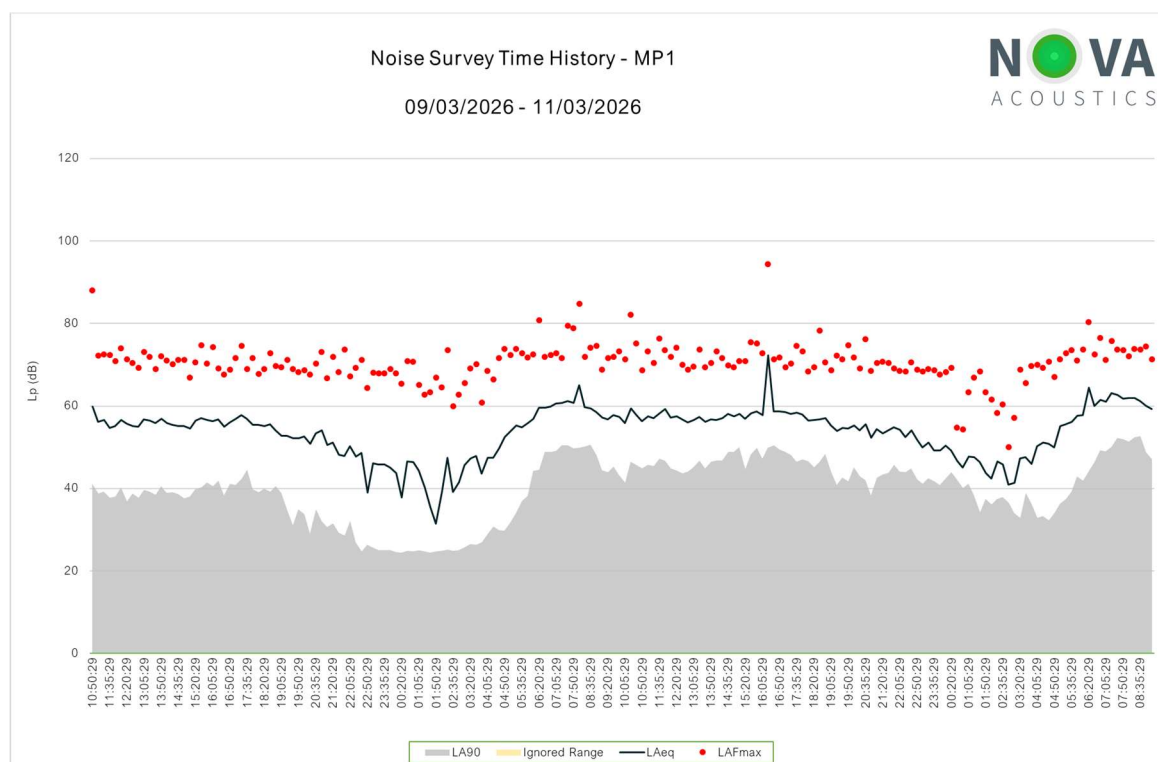


Figure 5 – MP1 Noise Survey Time History

D.2 – Surveying Equipment

Piece of Equipment	Serial No.	Calibration Deviation
Svantek SV971A Class 1 Sound Level Meter	141425	≤0.1
Cesva CB006 Class 1 Calibrator	902441	

Table 5 – Surveying Equipment

All equipment used during the survey was field calibrated at the start and end of the measurement period with a negligible deviation of ≤ 0.1 dB. All sound level meters are calibrated every 24 months, and all calibrators are calibrated every 12 months, by a third-party calibration laboratory. All microphones were fitted with a protective windshield for the entire measurements period. Calibration certificates can be provided upon request.

D.3 – Meteorological Conditions

As the environmental noise survey was carried out over a long un-manned period no localised records of weather conditions were taken. However, all measurements have been compared with met office weather data of the area, specifically the closest weather station, and the data from the weather station is outlined in the table below. When reviewing the time history of the noise measurements, any scenarios that were considered potentially to be affected by the local weather conditions have been omitted. The analysis of the noise data includes statistical and percentile analysis and review of minimum and maximum values,

which aids in the preclusion of any periods of undesirable weather conditions. The weather conditions were deemed suitable for the measurement of environmental noise in accordance with BS7445 Description and Measurement of Environmental Noise. The table below presents the average temperature, wind speed and rainfall range for each 24-hour period during the entire measurement.

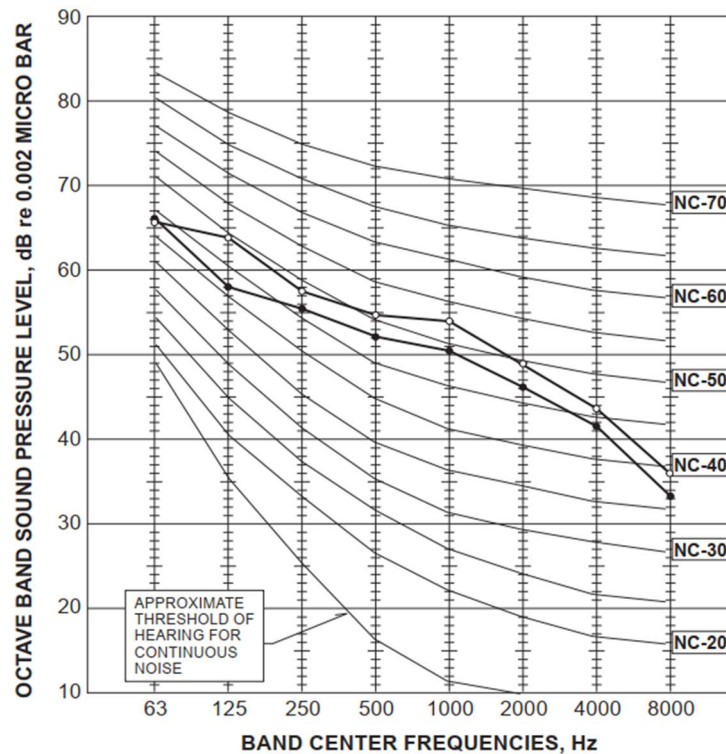
Weather Conditions – Devizes (Approx. 9km Southwest of Site)				
Time Period	Air Temp (°C)	Rainfall (mm/h)	Prevailing Wind Direction	Wind Speed (m/s)
09/03/26 – 00:00 – 23:59	6.4 – 11.4	0.0 – 0.3	SSE	0.0 – 3.1
10/03/26 – 00:00 – 23:59	4.8 – 11.2	0.0 – 0.5	SSW	0.0 – 3.1
11/03/26 – 00:00 – 23:59	6.1 – 12.1	0.0 – 0.5	W	0.0 – 4.4

Table 6 – Weather Conditions

Appendix D – Manufacturer's Datasheets

PUZ-M140VKA(-ET).TH
PUZ-M140YKA(-ET).TH

MODE	SPL(dB)	LINE
COOLING	55	●—●
HEATING	57	○—○



SERIES			PEA-M GAA Series (Ceiling Concealed)			PEAD-M Series (Ceiling Concealed)		
Indoor Unit			PEA-M100GAA	PEA-M125GAA	PEA-M140GAA	PEAD-M100JAAD	PEAD-M125JAAD	PEAD-M140JAAD
Outdoor Unit			PUZ-M100VKA-A	PUZ-M125VKA-A	PUZ-M140VKA-A	PUZ-M100VKA-A	PUZ-M125VKA-A	PUZ-M140VKA-A
Refrigerant			R32					
Power Source			230V, Single Phase, 50Hz					
Cooling	Capacity (Min-Rated-Max)	kW	4.0 - 10.0 - 10.6	6.0 - 12.0 - 13.5	6.2 - 14.0 - 15.3	4.0 - 10.0 - 10.6	6.0 - 12.0 - 13.5	6.2 - 14.0 - 15.3
	Total Input (Rated)	kW	3.08	3.81	4.22	3.06	3.83	4.40
	EER/AEER		3.24/3.12	3.14/3.04	3.31/3.22	3.26/3.13	3.13/3.03	3.18/3.09
	AEER (Part-Load%) *1		4.40	3.83	-	4.40	3.78	4.01
	Running Current (Rated)	A	14.5	18.5	20.4	14.1	17.8	20.4
	Sound Pressure Level	In (Lo-Mid-Hi)	33 - 38 - 42	42 - 45		33 - 38 - 42	36 - 40 - 44	40 - 44 - 49
		Out (PWL)	52 (71)	54 (72)		52 (71)	54 (72)	53 (71)
	Air Volume (In) Lo-Mid-Hi	L/S	567 - 700	800 - 1000		400 - 483 - 567	492 - 592 - 700	533 - 650 - 767
Heating	Capacity (Min-Rated-Max)	kW	2.8 - 12.5 - 12.5	4.1 - 14.0 - 15.5	5.7 - 16.0 - 18.0	2.8 - 12.5 - 12.5	4.1 - 14.0 - 15.5	5.7 - 16.0 - 18.0
	Total Input (Rated)	kW	3.36	3.54	4.20	3.35	3.68	4.30
	COP/ACOP		3.72/3.58	3.95/3.81	3.80/3.69	3.73/3.59	3.8/3.67	3.72/3.61
	Running Current (Rated)	A	15.8	17.3	20.3	16.5	17.1	20.0
	Sound Pressure Level	In (Lo-Mid-Hi)	39 - 42	42 - 45		33 - 38 - 42	36 - 40 - 44	40 - 44 - 49
		Out (PWL)	54 (72)	56 (74)		54 (72)	56 (74)	54 (72)
	Air Volume (In) Lo-Mid-Hi	L/S	567 - 700	800 - 1000		400 - 483 - 567	492 - 592 - 700	533 - 650 - 767
	Max. Running Current	A	23.28	29.78	30.86	29.00	29.30	29.64
Indoor Unit	Input [Cool/Heat] (Rated)	kW	0.21/0.21	0.49/0.49		0.25/0.23	0.36/0.34	0.39/0.37
	Dimensions (HxWxD)	mm	400 x 1400 x 634			250 x 1400 x 732		250 x 1600 x 732
	Weight	kg	63			39	40	44
	Static Pressure	Pa	50/100/150			35/50/70/100/125		
Outdoor Unit	Dimensions (HxWxD)	mm	981 - 1050 - 330 (+40)		1338 - 1050 - 330 (+40)	981 - 1050 - 330 (+40)		1338 - 1050 - 330 (+40)
	Weight	kg	76	84	99	76	84	99
Piping	Diameter (Gas/Liquid)	mm	15.88/9.52			15.88/9.52		
	Max. Length/Height	m	55/30			55/30		
Guaranteed Operating Range (Outdoor)		Cooling (°C)	-15 ~ 46			-15 ~ 46		
		Heating (°C)*2	-5 (-15 ^o) ~ 21			-5 (-15 ^o) ~ 21		
Precharge Refrigerant R32		kg	3.1 (30m)	3.6 (30m)	4.0 (55m)	3.1 (30m)	3.6 (30m)	4.0 (55m)
Additional Refrigerant		g/m	200	200	-	200	200	-
Spigot Sizes	Supply Air	mm	250 x 921			178 x 1360		
	Return Air	mm	330 x 1102			210 x 1358		210 x 1558



MUB 042 500EV Multibox

Item number: #235406

Efficient fans for supply or exhaust ventilation systems

- Acoustic and thermal insulation 30 mm
- Flexible airflow direction due to removable panels
- Indoor and outdoor installation
- Modular system of accessories
- Available with AC and EC motors for 50 and 60Hz

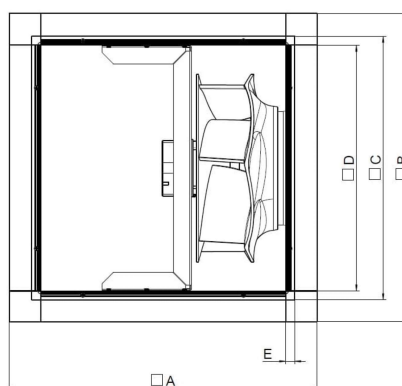
[Find more details in our online catalogue](#)

Technical parameters

Nominal data	
Voltage (nominal)	230 V
Frequency	50 Hz
Phases	1~
Input power	1137 W
Input power kW	1.137 kW
Input current	5.32 A
Impeller speed	1386 rpm
Air flow	max 2.08 m³/s
Capacitance of capacitor	30 µF
Temperature of transported air	max 60 °C
Max temperature of transported air, when speed controlled	60 °C
Protection/Classification	
Enclosure class, motor	IP54
Insulation class	F
Data according to ErP	
ErP ready	ErP 2018
Dimensions and weights	
Weight	61 kg
Others	
Motor type	AC

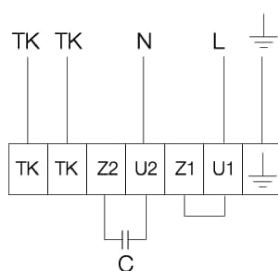
Dimension

MUB 042	□A	□B	□C	□D	E
400/450/500	690	690	590	548	21



Wiring

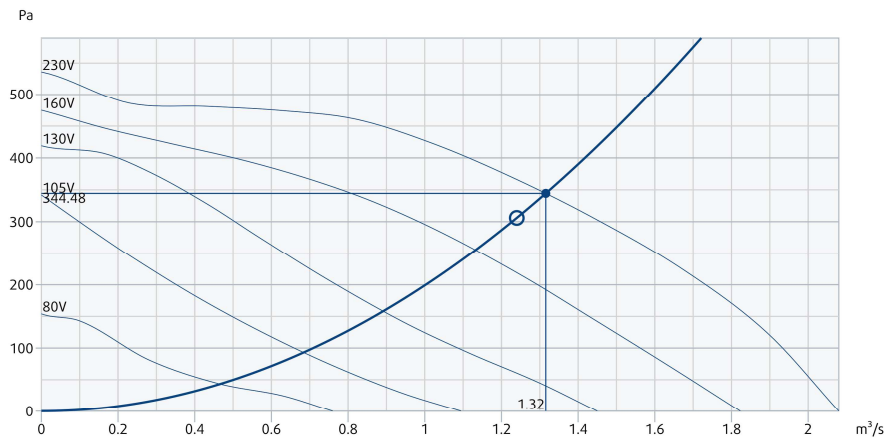
230V 1~



Article name: MUB 042 500EV Multibox | Product link: <https://systemair.com/en-gb/o/522949> | Item number: 235406 | Variant: 230V 1~ 50Hz - 90° air flow | Document type: Product card | Created at: 01/17/26 | Generated by: Systemair Catalogue | Language: English

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Performance curve



Hydraulic data									
Required air flow	1.24 m³/s								
Required static pressure	306 Pa								
Working air flow	1.32 m³/s								
Working static pressure	344 Pa								
Air density	1.204 kg/m³								
Power	1,091.6 W								
Fan control RPM	1,395 rpm								
Current	5.14 A								
SFP	0.830 kW/m³/s								
Control voltage	230.0 V								
Supply voltage	230 V								
Sound power level	63	125	250	500	1k	2k	4k	8k	Total
Inlet	dB(A) 47	66	68	74	78	77	73	65	82
Outlet	dB(A) 48	67	70	75	79	78	75	66	84
Surrounding	dB(A) 26	47	44	43	49	51	41	30	55
Sound pressure level at 3m (20m² Sabine)	dB(A) -	-	-	-	-	-	-	-	48
Sound pressure level at 3m free field	dB(A) -	-	-	-	-	-	-	-	34

AHU Accessories

CCM inlet MUB042 d400, 311780 (311780)
 CCM outlet MUB042 d400, 311682 (311682)
 CCM outlet 042 d400 KIT 30mm, 239093 (239093)
 FGV 042/586-586 flex. conn., 4605 (4605)
 FRQ5-E-6A, 37419 (37419)
 KKC-DX-L 042 cooling section, 277261 (277261)
 KKC-W-L 042 cooling section, 277269 (277269)
 KKC-W-R 042 cooling section, 277273 (277273)
 KKF 30 042-filter-section, 93311 (93311)
 KKH-HW 042 heater-section, 93339 (93339)
 KKS 042 silencer-section, 276851 (276851)
 REV-SPOL/05 ON/OFF, 33979 (33979)
 S-ET 10 Motor Protection, 161199 (161199)
 SDM Service Door MUB 042 30mm, 273934 (273934)
 UGS 042/500 adapter flex., 4357 (4357)
 WSG 042 MUB complete, 31485 (31485)

CCM inlet MUB042 d500, 311781 (311781)
 CCM outlet MUB042 d500, 311683 (311683)
 CCM outlet 042 d500 KIT 30mm, 239094 (239094)
 FRQ55-E-6A, 37421 (37421)
 GRU 042 base frame h= 100mm, 276661 (276661)
 KKC-DX-R 042 cooling section, 277265 (277265)
 KKC-W-L 042 cooling section, 277269 (277269)
 KKC-W-R 042 cooling section, 277273 (277273)
 KKH-HW 042 heater-section, 93339 (93339)
 KKS 042 silencer-section, 276851 (276851)
 REU 7 Speed control, 5007 (5007)
 RTRE 7 Speed control, 5011 (5011)
 SD-MUB Vibration pad set, 37324 (37324)
 TUNE-AHU-DE007-042-588x588-M0, 79881 (79881)
 WSD 042 (730x730x70) complete, 31481 (31481)

Documents

Commissioning Report
 EPD_360388_Systemair_MUB_AC_json
 EPD_360388_Systemair_MUB_AC_pdf
 Installation, Operation and Maintenance instruction_003
 MLR Manual

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