KR08048

Didsbury Express

Noise Impact Assessment…

Standard: British Standard 4142: 2014

Site: Didsbury Express

Address: 132-134 Burton Road
Didsbury
Manchester

Postcode: M20 1JQ

Customer: Tesco Stores Ltd

Address: Shire Park
Kestrel Way
Welwyn Garden City
Hertfordshire

Postcode: AL7 1GA

Issue: Version 1.1

Date: 2nd April 2026

Status: Current Document

KR Associates (UK) Ltd

Quietly confident…



Revisions…

KR08048		Project	Didsbury Express		
		Title	Replacement Refrigeration and Air Conditioning Equipment		
		Standard	British Standard 4142: 2014 + A1: 2019		
Issue	Date	Details of Revision			
v1_1	02/04/2026	Description	Report issue for submission to Local Authority		
		Signature			
		Name	Mr. R. Scrivener	Miss N Truman	Mr R Scrivener
		Position	Technical Director	Project Manager	Technical Director

Disclaimer…

This report is strictly confidential and is designed to meet the requirements of the customer. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party. No Liability is accepted outside the scope of this report in strict accordance with the standard terms and conditions.

KR Associates…

KR Associates (UK) Ltd (Company No. 04813349) registered office at 56 Bassett Green Road, Southampton. SO16 3DX.

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1. Executive Summary….

1.1. Instruction

KR Associates (UK) Ltd have been instructed by Tesco Stores Ltd to undertake an environmental noise survey at the Tesco Express located at 132-134 Burton Road in the Didsbury area of Manchester. The report will determine if the installation of the replacement gas cooler will have an adverse impact in terms of noise on the local noise sensitive properties.

1.2. Executive Summary (Repeated at Section 6)

1.2.1 Assessment Position

The 1st floor residential flat window over the rear of the store is located 4m from the remote horizontal 4-fan gas cooler at the rear of the store.

1.2.2 Background Noise Measurements

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,15m}$	$L_{Aeq,15m}$	$L_{A90,15m}$
48 - 81 dB	13 - 75 dB	36 - 54 dB	59 - 80 dB	54 - 75 dB	38 - 54 dB	52 - 79 dB	38 - 74 dB	34 - 43 dB
Minimum Background		36 dB	Minimum Background		38 dB	Minimum Background		34 dB

1.2.3 Criterion at Assessment Position

To comply with the revised version of the National Planning Policy Framework (“NPPF”) and the guidance within the Local Plan, the resultant noise levels at the nearest residential dwellings are 5 to 10 dB below the underlying background noise levels when assessed in accordance with British Standard 4142: 2014 + A1: 2019.

1.2.4 Mitigation Measures

The four fan horizontal discharge gas cooler has been selected to have an equivalent sound pressure level at 10m of 19 dB(A). i.e. 3T AFR-ZAP-EC-224-ECMP-200-V gas cooler.

1.2.5 Assessment of Noise Levels

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142	$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142	$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142
24 dB	36 dB	-12 dB	24 dB	38 dB	-14 dB	24 dB	34 dB	-10 dB

1.2.6 Conclusions

The resultant noise levels from the proposed mechanical equipment will result in noise levels that comply in full with the Local Plan and are at levels that are very unlikely to give rise to complaints from residents.

2. Site Location…

2.1. General Location of Site





Site Plan (Imagery © Google 2026)

The Tesco Express is located on the ground floor within an L-shaped building with the entrance facing Burton Road. The electricity sub station and the entrance to the flats are located on the left-hand side of the store entrance. The replacement gas cooler will be located in the same position as the existing gas cooler at the rear of the property. The centre of the 1st floor window directly above is located around 4.2m from the centre of the proposed gas cooler.

2.2. Key Positions (Source, Assessment & Background)





Position	Description	Latitude	Longitude	Elevation
Sources	Remote horizontal 4-fan gas cooler at the rear of the store	53.428637^0	-2.240993^0	2 m
Assessment	1st floor residential flat window over the rear of the store	53.428637^0	-2.240993^0	7 m
Background	Adjacent to the gas cooler using the minimum 5-minute levels	53.428623^0	-2.241008^0	2 m

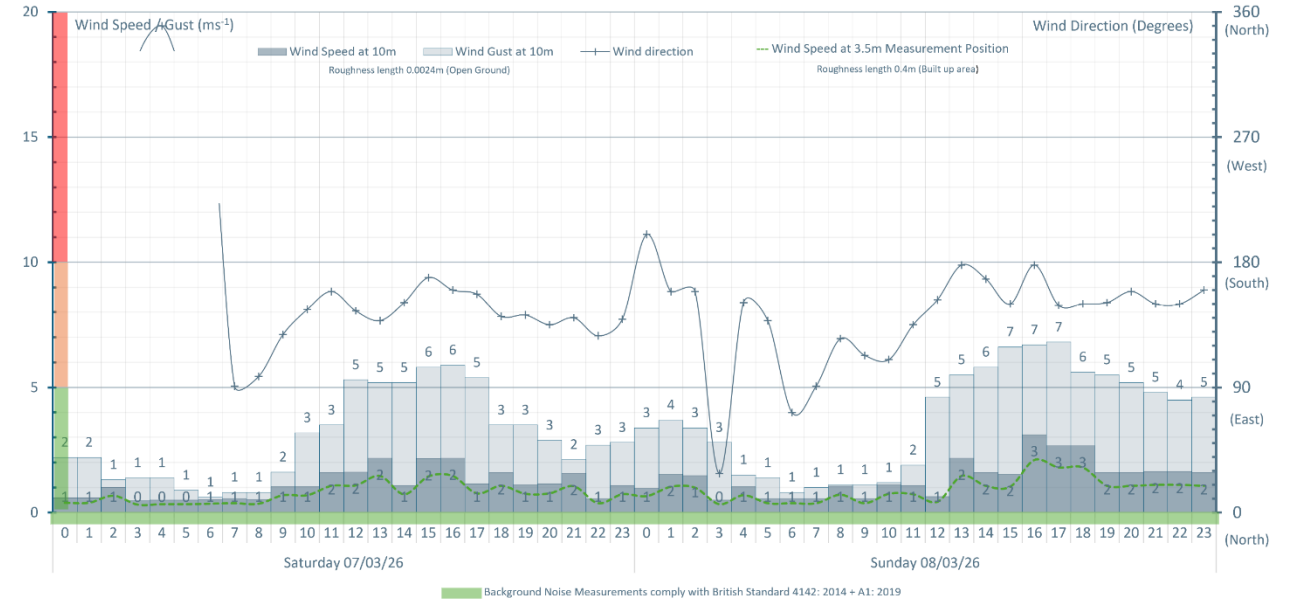
2.3. Free Field Source Sound Pressure Levels at 10m

Source	Description of Source	Sound Pressure at 10m – Annex C 13487: 2003		
		07:00 – 19:00	19:00 – 23:00	23:00 – 07:00
Source 1	3T AFR-ZAP-EC-224-ECMP-200-V Horizontal 4-fan remote gas cooler	$L_{p(10)}$ 19 dB		

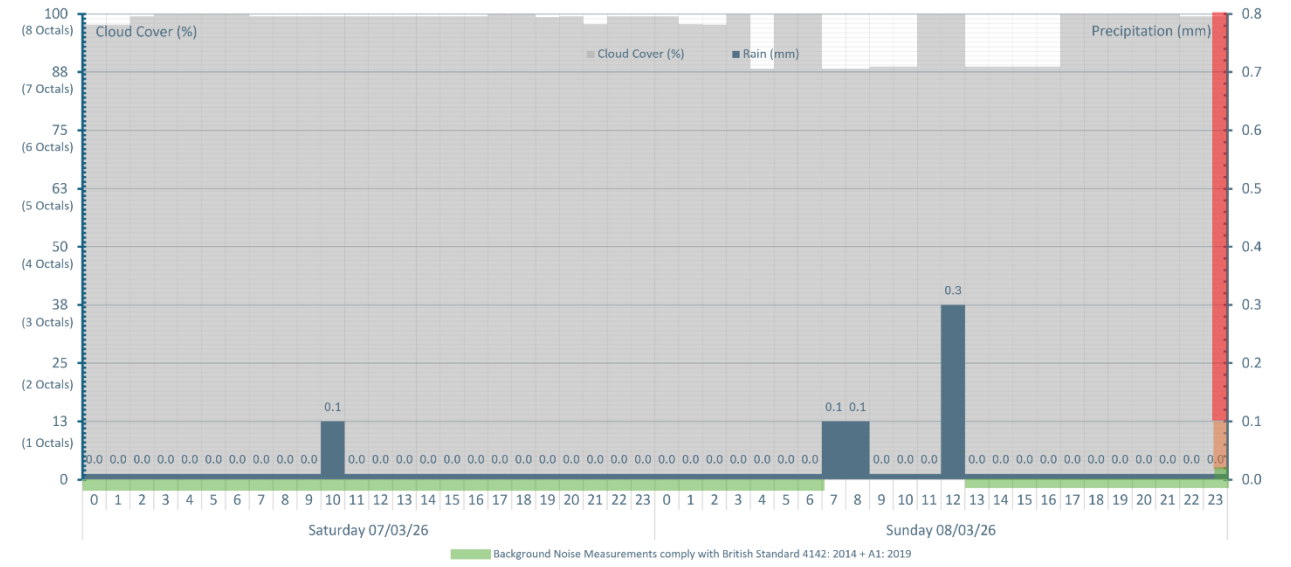
3. Background Noise Levels…

3.1. Weather During 48-hour Period (Saturday and Sunday)

3.1.1 Wind Speed, Gust and Direction



3.1.2 Rainfall, Temperature and Dew Point



3.1.3 Impact of Weather

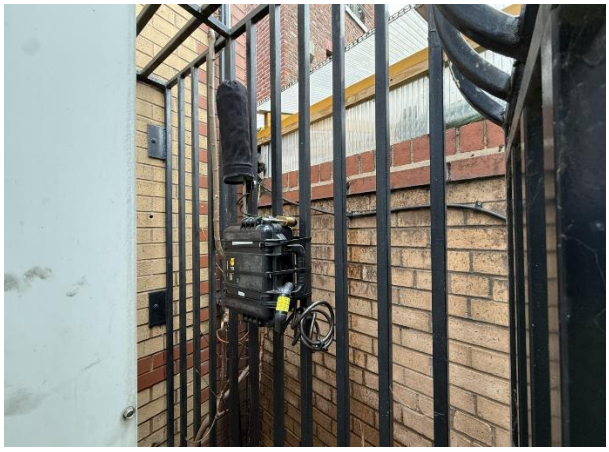
An analysis of the background data recorded on site indicates that the prevailing weather did not adversely impact the results. The wind speed was on average below 5.0ms^{-1} and though there were some short periods of rains these do not appear to have adversely impacted the recorded background noise levels.

3.2. Measurement Position

The background noise measurements were made adjacent to the existing 4-fan gas cooler on the rear of the building directly below the residential flats. The meter was positioned at the end of the unit to capture both the background noise levels and the noise from the existing gas cooler.



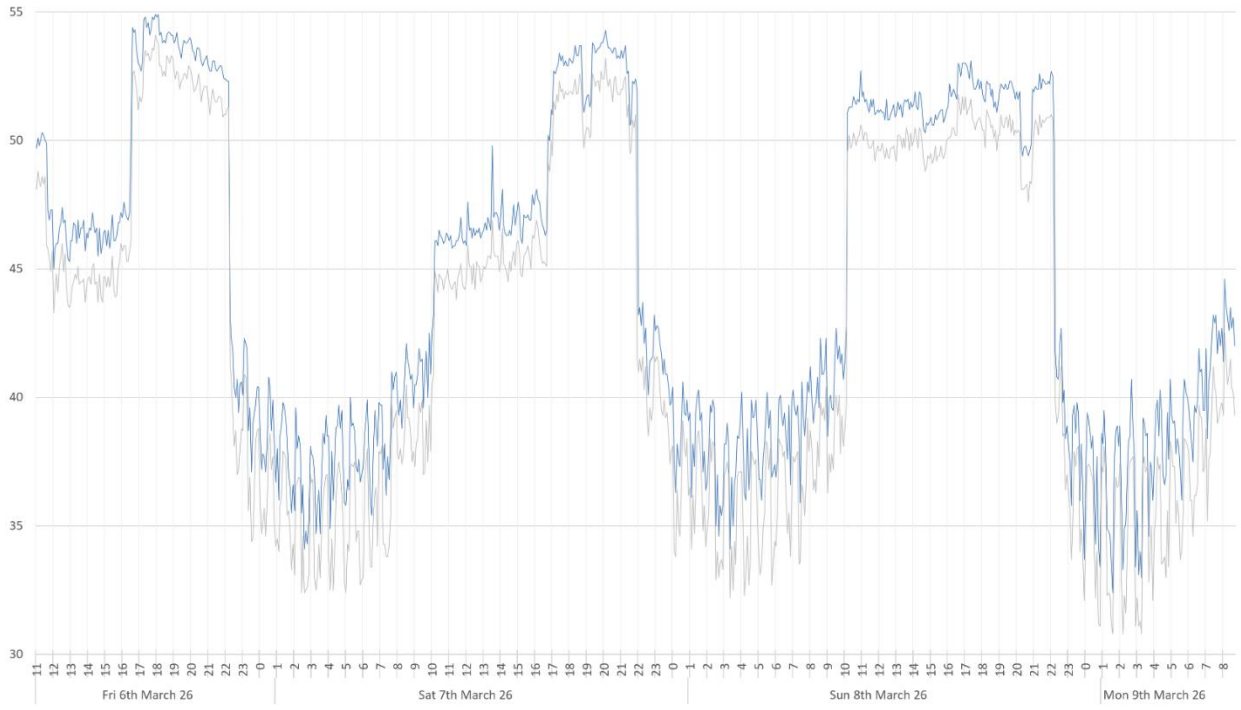
View of Rear of Property



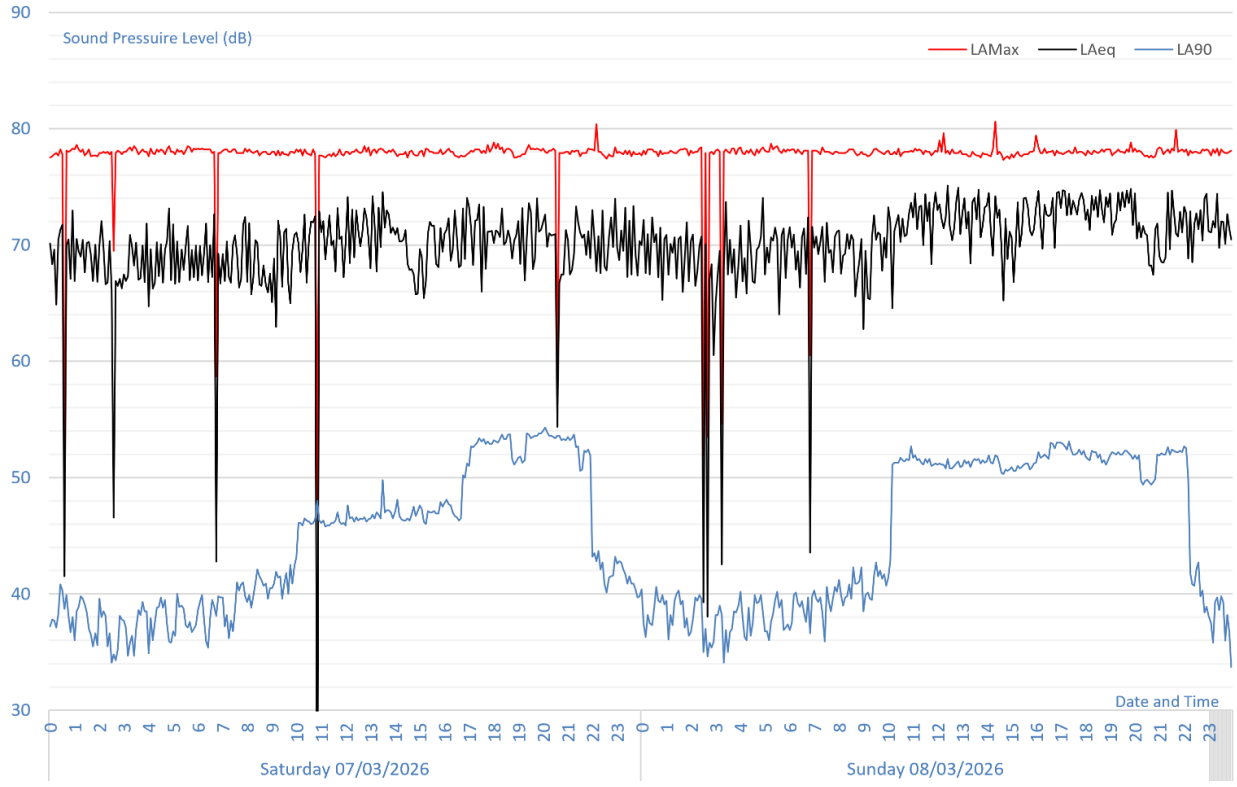
Location of Meter

3.3. 72-hour Measurements

The following graph shows the minimum and LA90 5-minute results. It can be seen when the existing unit turned on during the day time and night time period.

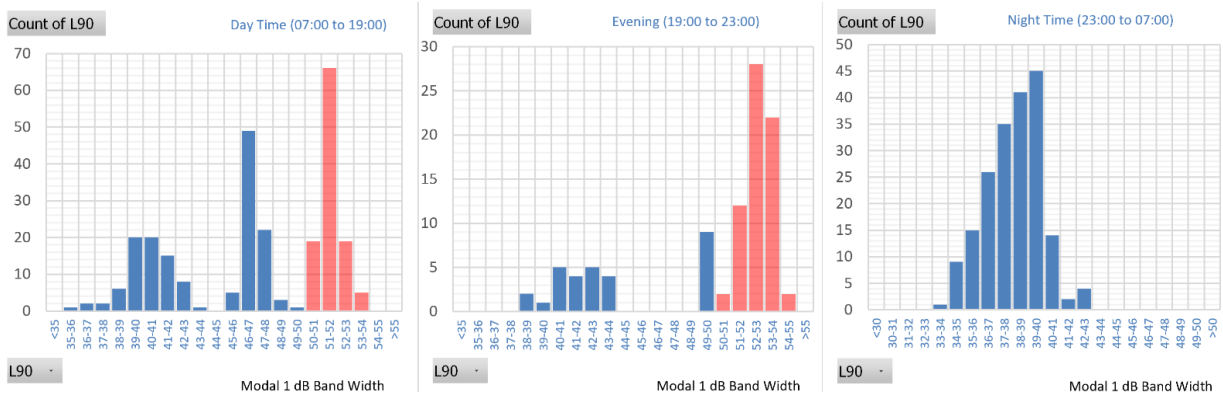


3.4. 48-hour Background Measurements



Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,15m}$	$L_{Aeq,15m}$	$L_{A90,15m}$
48 - 81 dB	13 - 75 dB	36 - 54 dB	59 - 80 dB	54 - 75 dB	38 - 54 dB	52 - 79 dB	38 - 74 dB	34 - 43 dB

3.5. Modal Analysis of Background Data



Day Time (07:00 to 19:00)		Evening (19:00 to 23:00)		Night Time (23:00 to 07:00)	
Standard Deviation (σ)	4.79	Standard Deviation (σ)	4.50	Standard Deviation (σ)	1.76
Geometric Average	47 dB	Geometric Average	50 dB	Geometric Average	38 dB
Minimum Value	36 dB	Minimum Value	38 dB	Minimum Value	34 dB

4. Criterion…

4.1. National Planning Policy Framework 2024

4.1.1 Scope of Standard

The revised National Planning Policy Framework published in December 2024 provides an assumption in favour of sustainable development that meets the three overarching objectives: economic, social, and environmental. Paragraph 11 provides guidance for decision makers:

> *"For decision-taking this means:…*
> *c) approving development proposals that accord with an up-to-date development plan without delay; or*
> *d) …granting permission unless…*
> *i) the application of policies in this Framework… provides a strong reason for refusing the development proposed; or*
> *ii) any adverse impacts of doing so would significantly and demonstrably outweigh the benefits…..''*

4.1.2 Conserving and Enhancing the Natural Environment

Paragraph 187 of the NPPF provides the following guidance on noise:

> *"Planning policies and decisions should contribute to and enhance the natural and local environment by:*
> *e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of …noise pollution…"*

4.1.3 Appropriate Development

Paragraph 198 of the NPPF requires the development to be appropriate for its location:

> *"Planning… decisions should also ensure that new development is appropriate for its location…*
> *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[72].*
> *b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value…*
>
> *[72]See Explanatory Note to the Noise Policy Statement for England (Department for Environment, Food & Rural Affairs, 2010)"*

4.2. Noise Policy Statement for England: 2010

4.2.1 Scope of Standard

The Noise Policy Statement for England published in 2010 defines three aims:

> *"**Avoid** significant adverse impact on health and the quality of life.*
> ***Mitigate** and minimise adverse impacts on health and quality of life; and*
> ***Contribute** to the improvement of health and the quality of life."*

4.2.2 Criterion

The NPSE defines significant adverse and adverse impact in terms of noise:

> *"**LOAEL** – Lowest Observed Adverse Effect Level*
> *This is the level above which adverse effects on health and quality of life can be detected.*
> ***SOAEL** – Significant Observed Adverse Effect Level*
> *This is the level above which significant adverse effects on health and quality of life occur."*

4.3. Night Noise Guidelines ("NNG")

The European Union and the World Health Organisation published the document *"Night Noise Guidelines for Europe"* in 2009.

4.3.1 Recommendation for Health Protection

> *"Below the level of 30 dB $L_{night,\ outside}$ no effects on sleep are observed except for a slight increase in the frequency of body movements during sleep due to night noise.*
>
> *…. 40 dB $L_{night,\ outside}$ is equivalent to the lowest observed adverse effect level (LOAEL) for night noise.*
>
> *Above 55 dB the cardiovascular effects become the major public health concern."*

For reference the $L_{night,\ outside}$ is the average outside noise level calculated over an 8-hour period (EU: 2002/49/EC).

4.3.2 Description of Effect of Change in Noise Level

Noise Level Change (dB)	Subjective Response	Significance
0.1 – 2.9	Barely perceptible	Minor Impact
3.0 – 5.9	Noticeable	Moderate Impact
6.0 – 9.9	Up to a doubling of loudness	Substantial Impact
10.0 or more	More than a doubling of loudness	Major Impact

4.4. British Standard 4142: 2014 + A1: 2019

4.4.1 Testing Standard…

British Standard 4142: 2014 + A1: 2019 provides a method for assessing the likely effects of sound from industrial or commercial nature on *"people who might be inside or outside a dwelling used for residential purposes."*

4.4.2 Criterion

The standard provides 3-levels of impact based on the calculated Rating Levels:

> *"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 +5dB is likely to be an indication of an adverse impact, depending on the context.*
> *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."*

4.4.3 Feature Correction

It is appropriate to add a character correction where there is a new source that cannot be measured in line with British Standard 4142: 2014 + A1: 2019. The 3 methods for approaching this are the subjective, objective, and reference methods. In this report the subjective method is used.

Section 9.2 Subjective Method	Perceptibility to noise sensitive façades	Correction
Tonality Ranging from not tonal to prominently tonal	Not tonal	+0
	Just perceptible	+2
	Clearly perceptible	+4
	Highly perceptible	+6
Impulsivity Considering both the rapidity and any overall change in sound levels	Not impulsive	+0
	Just impulsive	+3
	Clearly impulsive	+6
	Highly impulsive	+9
Readily Distinctive Characteristic is neither tonal nor impulsive	Is not present	+0
	Is present	+3
Intermittency Identifiable "on/off" conditions	Is not present	+0
	Is present	+3

4.5. Local Authority Requirements

4.5.1 Local Plan

The Manchester City Council Joint Development Plan Document was fully adopted in March 2024 including Policy JP-P1 entitled *"Sustainable Places."*

> *"We aim to become one of the most liveable city regions in the world, consisting of a series of beautiful, healthy and varied places, each having the following key attributes that all development, wherever appropriate, should be consistent with:*
>
> 1. *Distinctive, with a clear identity that:*
>
>   A. *Conserves and enhances the natural environment, landscape features, historic environment and local history and culture;*
>   B. *Enables a clear understanding of how the place has developed; and*
>   C. *Respects and acknowledges the character and identity of the locality in terms of design, siting, size, scale and materials used*
>
> 2. *Visually stimulating, creating interesting and imaginative environments which raise the human spirit through the use of green space, public art and quality design*
>
> 3. *Socially inclusive:*
>
>   A. *Responding to the needs of all parts of society;*
>   B. *Enabling everyone to participate equally and independently;*
>   C. *Providing opportunities for social contact and support; and*
>   D. *Promoting a sense of community*
>
> 4. *Resilient, capable of dealing with major environmental events*
>
> 5. *Adaptable, able to respond easily to varied and changing needs and technologies*
>
> 6. *Durable, being built to last and using robust materials that reflect local character, weather well and are easily maintained*
>
> 7. *Resource-efficient with:*
>   A. *A low carbon footprint;*
>   B. *Efficient use of land;*
>   C. *Minimised use of new materials;*
>   D. *High levels of recycling*

8. *Safe, including by designing out crime and terrorism, reducing opportunities for anti-social behaviour and by ensuring that developments make appropriate provision for response and evacuation in the case of an emergency or disaster.*

9. *Supported by critical infrastructure, such as energy, water and drainage and green spaces*

10. *Functional and convenient, enabling people and uses to act efficiently with minimal effort, and responding to needs relating to servicing, recycling facilities, refuse collection and storage*

11. *Incorporating inclusive design within all spaces with support for tackling inequality and poverty to form part of creating sustainable places*

12. *Legible, being easy to understand and navigate, with the protection and enhancement of key views and new development well-integrated into the place*

13. *Easy to move around for those of all mobility levels, particularly by walking and cycling, with enjoyable routes free from obstacles and disorienting stimuli, and with places to rest*

14. *Well-connected to other places, particularly by public transport and digital infrastructure enabling everyone to take advantage of the employment, cultural and leisure opportunities across Greater Manchester and beyond*

15. *Comfortable and inviting, with indoor and outdoor environments:*
    - *A. Offering a high level of amenity that minimises exposure to pollution; and*
    - *B. Addressing microclimate issues such as sunlight, indoor air quality, overheating, shade, wind and shelter*

16. *Incorporating high quality and well managed green infrastructure and quality public realm, with:*
    - *A. Opportunities for recreation and outdoor play for children, and interaction between the generations;*
    - *B. Public and private spaces clearly distinguished;*
    - *C. Development clearly defining, and promoting activity within, public spaces;*
    - *D. High quality landscaping with schemes*

17. *Well-served by local shops, services and amenities, including education and health facilities''*

Reference should be made to the Manchester City Council Core Strategy which was adopted in July 2012 (amended in March 2024 upon the adoption of the greater Manchester Joint Development Plan) including Policy DM 1 entitled *''Development Management.''*

> *''All development should have regard to the following specific issues for which more detailed guidance may be given within a supplementary planning document:-*
>
> - *Appropriate siting, layout, scale, form, massing, materials and detail.*
> - *Impact on the surrounding areas in terms of the design, scale and appearance of the proposed development. Development should have regard to the character of the surrounding area.*
> - *Effects on amenity, including privacy, light, noise, vibration, air quality, odours, litter, vermin, birds, road safety and traffic generation. This could also include proposals which would be sensitive to existing environmental conditions, such as noise''*

4.6. Planning Permission

Planning permission granted by Manchester City Council in April 2003 under reference 06774/FO/2003/S2 contained condition 3.

> *"3 Externally mounted ancillary equipment shall be acoustically treated in accordance with a scheme to be submitted to and approved by the City Council. The scheme shall be designed to as to achieve a noise level of 5 dB / 10 dB below the background at adjacent properties on Burton Road and properties adjacent to the rear of the development along Leopold Avenue. Measurements shall comply with the advice contained in BS 4142: 1990 'Rating industrial noise affecting mixed residential and industrial areas'."*

4.6.1 Proposed Criterion

It would be recommended that the proposed noise emissions are 5 to 10 dB below the minimum 15-minute background noise level at the nearest noise sensitive property.

5. Calculations of Noise Levels…

5.1. ISO 9613 – Part 2:1996

The International Standards Organisation ("ISO") published ISO 9613 – Part 2: 1996 entitled *"Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculations"* details the corrections that are required to establish the resultant noise levels of the existing and proposed plant at the assessment position.

5.1.1 Source Directivity (D_c)

A correction is made to account for the location of the source and the effect of additional reflective surfaces excluding the ground and is contained within section 6 of ISO 9613 - Part 2: 1996.

Number of Surfaces	Correction in dB (D_c)
1 Reflective Surface	+3 dB
2 Reflective Surfaces	+6 dB
3 Reflective Surfaces	+9 dB

5.1.2 Geometric Divergence (A_{div})

A correction is made for the distance between the source and assessment position using the following formula defined in section 7.1 of ISO 9613-Part 2: 1996.

Formula	Symbols
$A_{div} = 20 . Log_{10} (d/d_0) +11$	A_{div} = Reduction due to Geometric Divergence (dB) d = Distance from source to receiver (m) d_0 = reference distance (1m)

5.1.3 Ground Absorption (A_{gr})

A correction is made for the effect of the ground between the source and receiver depending on whether it is considered hard or soft ground.

Type of ground	Correction in dB (A_{gr})
Hard Ground	+ 3 dB
Soft Ground	+ 0 dB

5.1.4 Atmospheric Absorption (A_{atm})

As the source was less than 100m from the receiver position (assessment position) no correction was made for atmospheric absorption.

5.1.5 Barrier Effect (A_{bar})

A correction is made for any barrier in the direct line of sight between the source and the assessment position and is detailed in section 7.4 of ISO 9613-Part 2: 1996. For clarity, the K_{met} meteorological correction has been ignored and C_2 equals 40 and C_3 equals 1.

Formula	Symbols
$A_{bar} = 10 . Log_{10} [3 + (40 . \delta / \lambda) - A_g]$ *Note 1 where $\delta = a + b - r$ and $\lambda = c / f$	A_{bar} = Effective barrier attenuation (dB) A_{gr} = Total Ground Absorption (dB) *Note 1: Only apply the A_{gr} correction if $A_{gr} > 0$ δ = Path difference (m) a = Distance from source to barrier head (m) b = Distance from barrier head to assessment position (m) r = Distance from source to assessment position (m) λ = Wavelength of sound (m) c = Speed of sound – Assumed to be 342 ms^{-1} f = Octave band centre frequency (Hz)

5.2. Calculation of Plant Noise Levels

Operating 24-hours per day		Source	ISO 9613 – Part 2: 1996 Corrections					Assessment
Ref	Description	L_w	D_c	A_{div}	A_{gr}	A_{atm}	A_{bar}	Lp
1	Remote Gas Cooler	47 dB	+3 dB	-24 dB	+3 dB	-0 dB	-5 dB	24 dB

5.3. Assessment of Average Noise Levels (BS 4142: 2014 + A1: 2019)

BS 4142: 2014	Day Time - 07:00 to 19:00	Evening – 19:00 to 23:00	Night Time – 23:00 to 07:00
Residual Noise Levels	$L_{Aeq,1\ hours}$ 71 dB	$L_{Aeq,1\ hours}$ 71 dB	$L_{Aeq,15\ minutes}$ 68 dB
Specific Noise Levels	$L_{Aeq,1\ hours}$ 24 dB	$L_{Aeq,1\ hours}$ 24 dB	$L_{Aeq,\ 15\ minutes}$ 24 dB
Impulsivity Feature	+0 dB	+0 dB	+0 dB
Tonality Feature	+0 dB	+0 dB	+0 dB
Rating Noise Levels	$L_{Aeq,1\ hours}$ 24 dB	$L_{Aeq,1\ hours}$ 24 dB	$L_{Aeq,\ 15\ minutes}$ 24 dB
Background Noise Levels	$L_{A90,1\ hours}$ 36 dB	$L_{A90,1\ hours}$ 38 dB	$L_{A90,\ 15\ minutes}$ 34 dB
BS 4142 Assessment	-12 dB (Low Impact)	-14 dB (Low Impact)	-10 dB (Low Impact)
Uncertainty (95% Confidence, k=2)	+- 2.08 dB	+- 2.05 dB	+- 1.78 dB

6. Conclusions…

6.1. Assessment Position

The 1st floor residential flat window over the rear of the store is located 4m from the remote horizontal 4-fan gas cooler at the rear of the store.

6.2. Background Noise Measurements

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,15m}$	$L_{Aeq,15m}$	$L_{A90,15m}$
48 - 81 dB	13 - 75 dB	36 - 54 dB	59 - 80 dB	54 - 75 dB	38 - 54 dB	52 - 79 dB	38 - 74 dB	34 - 43 dB
Minimum Background		36 dB	Minimum Background		38 dB	Minimum Background		34 dB

6.3. Criterion at Assessment Position

To comply with the revised version of the National Planning Policy Framework ("NPPF") and the guidance within the Local Plan, the resultant noise levels at the nearest residential dwellings are 5 to 10 dB below the underlying background noise levels when assessed in accordance with British Standard 4142: 2014 + A1: 2019.

6.4. Mitigation Measures

The four fan horizontal discharge gas cooler has been selected to have an equivalent sound pressure level at 10m of 19 dB(A). i.e. 3T AFR-ZAP-EC-224-ECMP-200-V gas cooler.

6.5. Assessment of Noise Levels

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142	$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142	$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142
24 dB	36 dB	-12 dB	24 dB	38 dB	-14 dB	24 dB	34 dB	-10 dB

6.6. Conclusions

The resultant noise levels from the proposed mechanical equipment will result in noise levels that comply in full with the Local Plan and are at levels that are very unlikely to give rise to complaints from residents.

6.7. Uncertainty

Day Time (07:00 – 19:00)	Evening (19:00 – 23:00)	Night Time (23:00 – 07:00)
+-2.08 dB (k=2, 95% Confidence)	+-2.05 dB (k=2, 95% Confidence)	+-1.78 dB (k=2, 95% Confidence)

7. Appendix A - BS 4142:2014 + A1: 2019 Information to Be Reported…

7.1. a) Competency

	Name	Role	Competency
1)	Mr. R. Scrivener	Director	Master of Science Degree in Acoustics and Noise Control (MSc) Member of the Institute of Acoustics (MIOA)

7.2. b) Source Under Investigation

1)	Source Number	Description		
	Source 1	Remote Gas Cooler		
2) 3) 4) 5)	Description of Source	Source Location	Hours of Operation	Mode of Operation
	Source 1	Remote horizontal 4-fan gas cooler at the rear of the store	24-hour	Continuously on Demand
	Description of Operation	Period	Conditions	Load
	All Sources	Day Time (07:00 to 19:00)	Ambient Temp 32°C	Maximum Load (100%)
		Evening (19:00 to 23:00)	Ambient Temp 28°C	Part Load (60%)
		Night Time (23:00 to 07:00)	Ambient Temp 24°C	Part Load (40%)
	Description of Premises	The Tesco Express is located on the ground floor within an L-shaped building with the entrance facing Burton Road. The electricity sub station and the entrance to the flats are located on the left-hand side of the store entrance The replacement gas cooler will be located in the same position as the existing gas cooler at the rear of the property. The centre of the 1st floor window directly above is located around 4.2m from the centre of the proposed gas cooler.		

7.3. c) Subjective Impression of Source at Assessment Position

1)	Dominance	Source will not be dominant at residential facade
	Audibility	Source will not be audible at residential facade
2)	Residual Noise Sources	Residual noise due to local road traffic

7.4. d) Existing Contexts

	Type of Receptor	Period	Sensitivity	Description
1)	Residential	Day Time (07:00 to 19:00)	Low	Noise can disturb outside amenity space and internal living space
		Evening (19:00 to 23:00)	Moderate	Noise can interrupt people trying to get to sleep
		Night Time (23:00 to 07:00)	High	Noise can disturb sleeping

7.5. e) Relative Positions

1)	Assessment Position	1st floor residential flat window over the rear of the store		
		BS 4142:2014 Criteria	Details	Compliance with Criteria
		Section 6	1.0m from façade (external)	Position is valid
2)	Source Measurement	The source sound power levels were supplied by the client. It is believed the sound power levels were established in accordance with BS EN 13487:2003.		
	Justification	The client supplied the noise levels for the proposed plant.		
3)	Background Position	Adjacent to the gas cooler using the minimum 5-minute levels		
	Justification	BS 4142:2014 Criteria	Details	Compliance with Criteria
		Section 6.2	3.5m to any reflecting surface	Complies
		Section 6.2	Height 1.2m to 1.5m	Complies
		Section 6.2	1st floor 1m to facade	Not applicable
		Section 6.2	Measurement Height	3.5m
			Distance to Reflecting Surface	1.0m
		To record remote background levels, the noise meter had to be left in a secure position. The position represented the assessment position within the constraints of the site.		
4)	Topography, surfaces etc.	Hard and Flat		
5)	Relative Distances	The plant is located approximately 4m from the assessment position.		
6)	Dimensioned sketch	See maps and images.		

7.6. f) Noise Measurement Equipment Calibration

1)	Type	Sound Level Meter	Microphone	Calibrator
		KRE/05/01	KRE/05/02	KRE/05/04
2)	Manufacturer	Casella CEL 63X	Casella CEL 251	Casella CEL 120/1
3)	Serial Number	4734887	00671	5231047
4)	Certificate Number	Certificate: C00558	Certificate: C00558	Certificate: C00543
	Calibration Due Date	16/03/2027	16/03/2027	05/01/2027

7.7. g) Noise Measurement Equipment Operation Test

1)	Ref. Level of Calibrator	94 dB
2)	Meter Reading Before	94 dB – Meter operation checked. Meter in good working order.
	Meter Reading After	94 dB - Meter operation checked. Meter in good working order.

7.8. h) Weather Conditions

1)	Wind Speed	See weather information
	Wind Direction	
2)	Temperature Inversion	Unlikely to have occurred
3)	Precipitation	None – See section 3.1
4)	Fog	None
5)	Wet Ground	Not within the measurement period – See section 3.1
6)	Frozen Ground or Snow	Not within the measurement period – See section 3.1
7)	Temperature	See section 3.1
8)	Cloud Cover	Partly Cloudy

7.9. i) Date of Measurements

1)	Source Measurements	Unknown
	Background Measurements	07/03/2026

7.10. j) Measurement Time Interval

1)	Source Measurements	T_m = 15 minutes	
	Background Measurements	Day Time (07:00 to 19:00)	T_m = 12 hours
		Evening (19:00 to 23:00)	T_m = 4 hours
		Night Time (23:00 to 07:00)	T_m = 8 hours

7.11. k) Reference Time Interval

1)	Reference Time Interval	Day Time (07:00 to 19:00)	T_r = 1 hour
		Evening (19:00 to 23:00)	T_r = 1 hour
		Night Time (23:00 to 07:00)	T_r = 15 minutes

7.12. l) Specific Noise / m) Background Noise / n) Rating / o) Assessment / p) Conclusions

These details are all included within the body of the report and are not replicated within this section.

END OF REPORT (1st and last page not numbered)



KR Associates (UK) Ltd

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