KR07360

Newport Tesco Express

Noise Impact Assessment…

Standard: British Standard 4142: 2014

Site: Newport Tesco Express

Address: 113 High Street
Newport
Isle of Wight
Hampshire

Postcode: PO30 1TJ

Customer: Tesco Stores Ltd

Address: Shire Park
Kestrel Way
Welwyn Garden City
Hertfordshire

Postcode: AL7 1GA

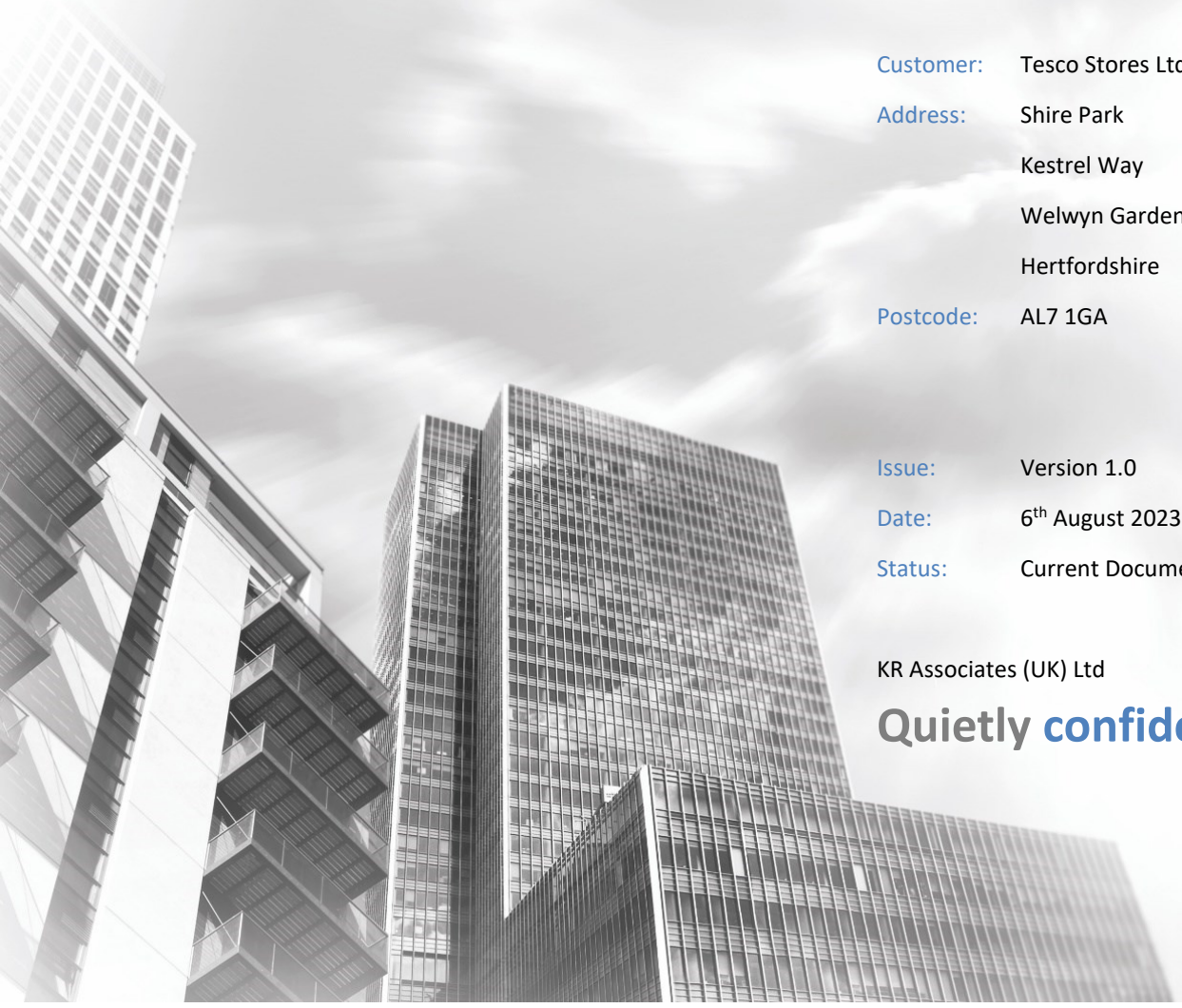
Issue: Version 1.0

Date: 6th August 2023

Status: Current Document

KR Associates (UK) Ltd

Quietly confident…



Revisions…

KR07360		Project	Newport Tesco Express		
		Title	Noise Impact Assessment - Proposed Additional Plant		
		Standard	British Standard 4142: 2014 + A1: 2019		
Issue	Date	Details of Revision			
v1_0	06/08/2023	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 113 High Street in Newport on the Isle of Wight. It is proposed to convert the ground floor to a Tesco Express convenience store and this report will determine if the installation of the proposed plant will have a significant 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 at the rear of 114 St James Street is located between 15 m and 19 m from the at ground floor level at the rear of the building.

1.2.2 Background Noise Measurements

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,15m}$	$L_{Aeq,15m}$	$L_{A90,15m}$
58 - 89 dB	47 - 68 dB	41 - 53 dB	57 - 81 dB	42 - 59 dB	37 - 45 dB	41 - 78 dB	33 - 59 dB	30 - 44 dB
Minimum Background		41 dB	Minimum Background		37 dB	Minimum Background		30 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 below the underlying background noise levels when assessed in accordance with British Standard 4142: 2014 + A1: 2019.

1.2.4 Mitigation Measures

The standard Tesco Packaged refrigeration gas cooler will work in this location, but it will be necessary to install a timber hit and miss fence around the unit so that the 1st floor residents don't have a direct line of site.

1.2.5 Assessment of Noise Levels

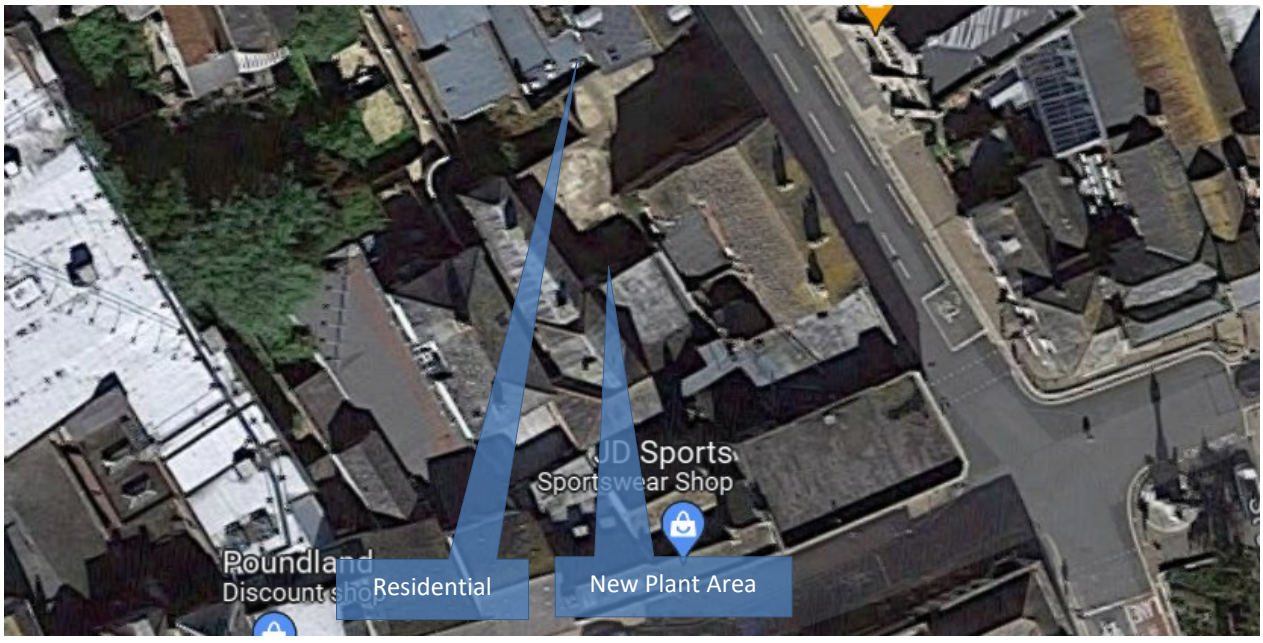
Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142	$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142	$L_{Aeq,1h}$	$L_{A90,1h}$	BS4142
35 dB	41 dB	-6 dB	35 dB	37 dB	-2 dB	25 dB	30 dB	-5 dB

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.

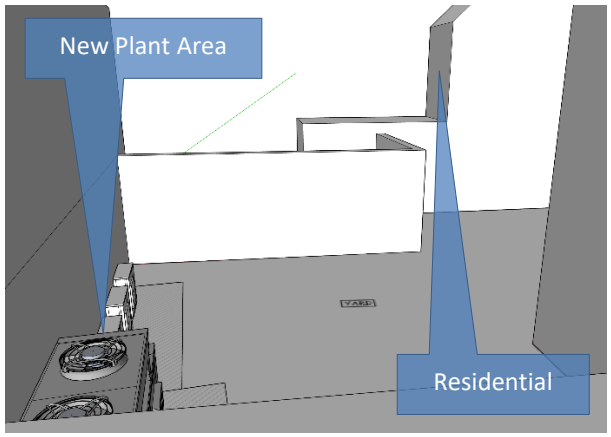
2. Site Location…

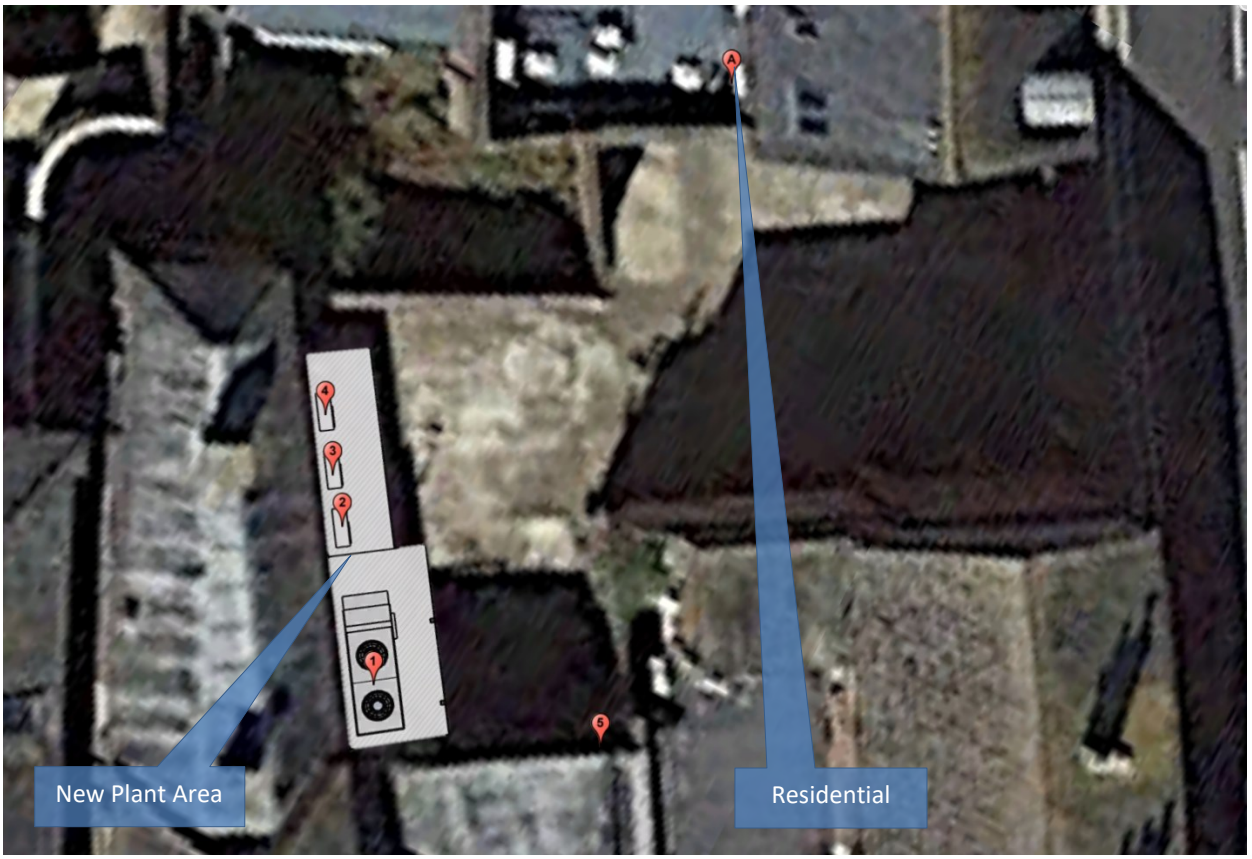
2.1. General Location of Site



It is proposed to convert the ground floor of the empty retail unit located at 113 High Street at the junction of St James Street into a Tesco Express convenience store. The proposed refrigeration, air conditioning and extract fan will be located at the rear of the premises within the car park area around 15 to 19m from the 1st floor residential window at the rear of 114 St James Street.

2.2. Key Positions (Source, Assessment & Background)





Position	Description	Latitude	Longitude	Elevation
Sources	At ground floor level at the rear of the building	50.699967^0	-1.296176^0	2 m
Assessment	1st floor at the rear of 114 St James Street	50.700129^0	-1.296171^0	7 m
Background	On the 1st floor flat roof at the rear of the building	50.699895^0	-1.296077^0	4 m

2.3. Locations and Distances of Individual Source Positions

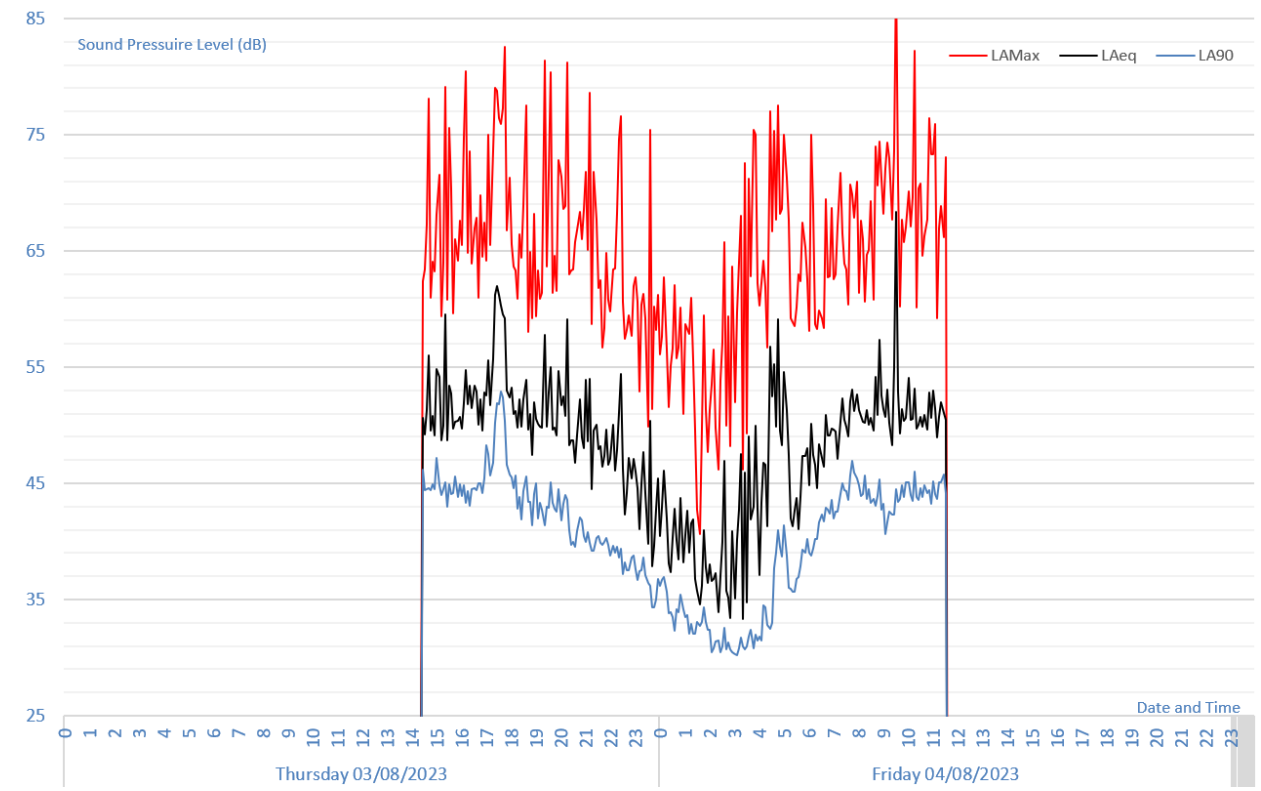
Position	Relative Distance	Latitude	Longitude	Elevation
Source 1	19 m to assessment position	50.699967^0	-1.296176^0	2 m
Source 2	17 m to assessment position	50.699994^0	-1.296213^0	1 m
Source 3	16 m to assessment position	50.700003^0	-1.296225^0	1 m
Source 4	15 m to assessment position	50.700014^0	-1.296238^0	1 m
Source 5	18 m to assessment position	50.699978^0	-1.296097^0	2 m

2.4. 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	Standard CO2 Packaged Gas Cooler	$L_{p(10)}$ 40 dB	$L_{p(10)}$ 40 dB	$L_{p(10)}$ 30 dB
Source 2	Daikin 140 AZAS 140 (Low Noise Cards)	$L_{p(10)}$ 31 dB	$L_{p(10)}$ 31 dB	Not Operating
Source 3	Daikin 140 AZAS 140 (Low Noise Cards)	$L_{p(10)}$ 31 dB	$L_{p(10)}$ 31 dB	
Source 4	Daikin 140 AZAS 140 (Low Noise Cards)	$L_{p(10)}$ 31 dB	$L_{p(10)}$ 31 dB	
Source 5	Toilet Extract Systemair K200 M Sileo	$L_{p(10)}$ 30 dB	$L_{p(10)}$ 30 dB	

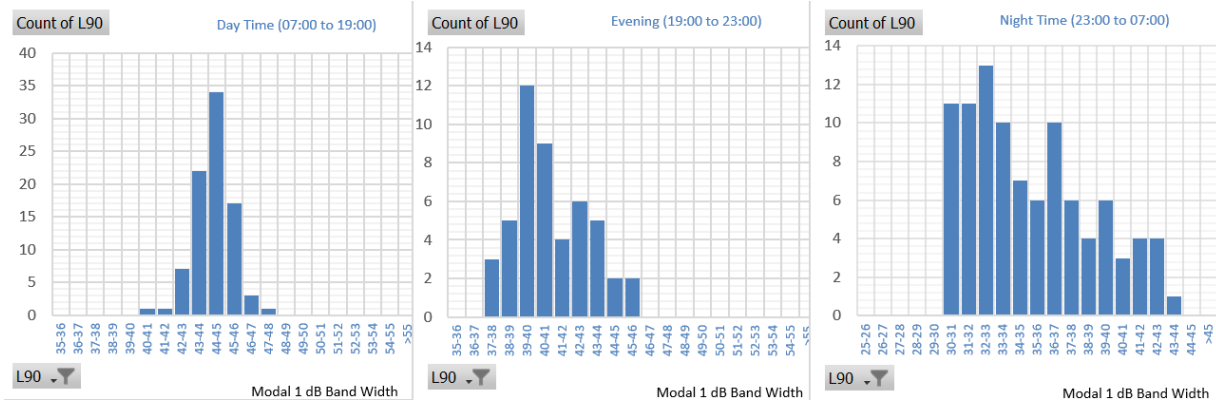
3. Background Noise Levels…

3.1. 24-hour Background Measurements



Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,15m}$	$L_{Aeq,15m}$	$L_{A90,15m}$
58 - 89 dB	47 - 68 dB	41 - 53 dB	57 - 81 dB	42 - 59 dB	37 - 45 dB	41 - 78 dB	33 - 59 dB	30 - 44 dB

3.2. 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)	2.07	Standard Deviation (σ)	2.01	Standard Deviation (σ)	3.61
Geometric Average	45 dB	Geometric Average	41 dB	Geometric Average	35 dB
Modal Value	41 dB	Modal Value	37 dB	Modal Value	30 dB

4. Criterion…

4.1. National Planning Policy Framework 2021

4.1.1 Scope of Standard

The revised National Planning Policy Framework published in 2021 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 clear reason for refusing 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 174 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 185 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; [65]*
> *b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value…*
>
> *65 See Explanatory Note to the Noise Policy Statement for England: 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 Isle of Wight Council Core Strategy was fully adopted in March 2012 including Policy DM2 entitled *"Design Quality for New Development."*

> *''The Council will support proposals for high quality and inclusive design to protect, conserve and enhance our existing environment whilst allowing change to take place. A robust design process with the use of skilled designers and pre-application discussions will be promoted.*
>
> *Relevant information according to the site's size, location and context will be required in order for the Council to determine planning applications properly and quickly. All new development should respond to a clear understanding of physical, social, economic, environmental and policy context.*
>
> *Development proposals will be expected to:*
>
> 1. *Provide an attractive, functional, accessible, safe and adaptable built environment with a sense of place.*
> 2. *Optimise the potential of the site but have regard to existing constraints such as adjacent buildings, topography, views, water courses, hedges, trees, wildlife corridors or other features which significantly contribute to the character of the area.....*
> 5. *Minimise the consumption of natural resources and the production of waste or pollution.....''*

4.5.2 Existing Planning Permission

Planning permission was granted by Isle of Wight Council under reference 21/00533/FUL for the *''Proposed flexible change of use of ground floor from Shop (Class E) to restaurant/café (Class E) or drinking establishment (sui generis); extraction system; proposed second floor extension and conversion of first and second floors to form five flats''* on 21st March 2022 with no noise related planning conditions.

Advice has been provided that the granted change of use to convert the first and second floors to residential flats will not be undertaken.

4.5.3 Proposed Criterion

It would be recommended that the proposed noise emissions are 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

5.2.1 Day Time (07:00 to 23:00)

Day Time (07:00 to 19:00)		Source	ISO 9613 – Part 2: 1996 Corrections					Assessment
Ref	Description	L_w	D_c	A_{div}	A_{gr}	A_{atm}	A_{bar}	Lp
1	Standard CO2 Packaged Gas Cooler	68 dB	+3 dB	-36 dB	+3 dB	-0 dB	-5 dB	33 dB
2	Daikin 140 AZAS 140 (Low Noise Cards)	59 dB	+3 dB	-35 dB	+3 dB	-0 dB	-5 dB	25 dB
3	Daikin 140 AZAS 140 (Low Noise Cards)	59 dB	+3 dB	-35 dB	+3 dB	-0 dB	-5 dB	25 dB
4	Daikin 140 AZAS 140 (Low Noise Cards)	59 dB	+3 dB	-35 dB	+3 dB	-0 dB	-5 dB	26 dB
5	Toilet Extract Systemair K200 M Sileo	58 dB	+3 dB	-36 dB	+3 dB	-0 dB	-5 dB	23 dB
TOT	Total Noise Levels	70 dB	-35 dB					35 dB

5.2.2 Night Time (23:00 to 07:00)

Night Time (23:00 to 07:00)		Source	ISO 9613 – Part 2: 1996 Corrections					Assessment
Ref	Description	L_w	D_c	A_{div}	A_{gr}	A_{atm}	A_{bar}	Lp
1	Standard CO2 Packaged Gas Cooler	58 dB	+3 dB	-36 dB	+3 dB	-0 dB	-5 dB	23 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	$L_{Aeq,1\ hours}$ 52 dB	$L_{Aeq,1\ hours}$ 50 dB	$L_{Aeq,15\ minutes}$ 43 dB
Specific Noise Levels	$L_{Aeq,1\ hours}$ 35 dB	$L_{Aeq,1\ hours}$ 35 dB	$L_{Aeq,\ 15\ minutes}$ 23 dB
Impulsivity Feature	+0 dB	+0 dB	+2 dB
Tonality Feature	+0 dB	+0 dB	+0 dB
Rating Noise Levels	$L_{Aeq,1\ hours}$ 35 dB	$L_{Aeq,1\ hours}$ 35 dB	$L_{Aeq,\ 15\ minutes}$ 25 dB
Background Noise Levels	$L_{A90,1\ hours}$ 41 dB	$L_{A90,1\ hours}$ 37 dB	$L_{A90,\ 15\ minutes}$ 30 dB
BS 4142 Assessment	-6 dB (Low Impact)	-2 dB (Low Impact)	-5 dB (Low Impact)
NPPF – Paragraph 125	-0 dB (Low Impact)	-0 dB (Low Impact)	-0 dB (Low Impact)
Uncertainty (95% Confidence, k=2)	+- 1.81 dB	+- 1.80 dB	+- 1.96 dB

6. Conclusions…

6.1. Assessment Position

The 1st floor at the rear of 114 St James Street is located between 15 m and 19 m from the at ground floor level at the rear of the building.

6.2. Background Noise Measurements

Day Time (07:00 – 19:00)			Evening (19:00 – 23:00)			Night Time (23:00 – 07:00)		
$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,1h}$	$L_{Aeq,1h}$	$L_{A90,1h}$	$L_{Amax,15m}$	$L_{Aeq,15m}$	$L_{A90,15m}$
58 - 89 dB	47 - 68 dB	41 - 53 dB	57 - 81 dB	42 - 59 dB	37 - 45 dB	41 - 78 dB	33 - 59 dB	30 - 44 dB
Minimum Background		41 dB	Minimum Background		37 dB	Minimum Background		30 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 below the underlying background noise levels when assessed in accordance with British Standard 4142: 2014 + A1: 2019.

6.4. Mitigation Measures

The standard Tesco Packaged refrigeration gas cooler will work in this location, but it will be necessary to install a timber hit and miss fence around the unit so that the 1st floor residents don't have a direct line of site.

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
35 dB	41 dB	-6 dB	35 dB	37 dB	-2 dB	25 dB	30 dB	-5 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)
+-1.81 dB (k=2, 95% Confidence)	+-1.80 dB (k=2, 95% Confidence)	+-1.96 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	Standard CO2 Packaged Gas Cooler		
	Source 2	Daikin 140 AZAS 140 (Low Noise Cards)		
	Source 3	Daikin 140 AZAS 140 (Low Noise Cards)		
	Source 4	Daikin 140 AZAS 140 (Low Noise Cards)		
	Source 5	Toilet Extract Systemair K200 M Sileo		
2)	Description of Source	Source Location	Hours of Operation	Mode of Operation
	Source 1	At ground floor level at the rear of the building.	24-hour	Continuously on Demand
	Source 2		07:00 - 23:00	
	Source 3		07:00 - 23:00	
	Source 4		07:00 - 23:00	
	Source 5		07:00 - 23:00	
3) 4) 5)	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	It is proposed to convert the ground floor of the empty retail unit located at 113 High Street at the junction of St James Street into a Tesco Express convenience store. The proposed refrigeration, air conditioning and extract fan will be located at the rear of the premises within the car park area around 15 to 19m from the 1st floor residential window at the rear of 114 St James Street		

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 at the rear of 114 St James Street.		
		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	On the 1st floor flat roof at the rear of the building.		
	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 15.0 m to 18.7 m 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 633	Casella CEL 251	Casella CEL 120/1
3)	Serial Number	2145360	00709	5231047
4)	Certificate Number	Certificate: U42913	Certificate: 42912	Certificate: U42911
	Calibration Due Date	10/01/2025	10/01/2025	10/01/2024

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	03/08/2023

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

Quietly confident…

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