

Sheriffhall South East Noise Impact Assessment





Sheriffhall South

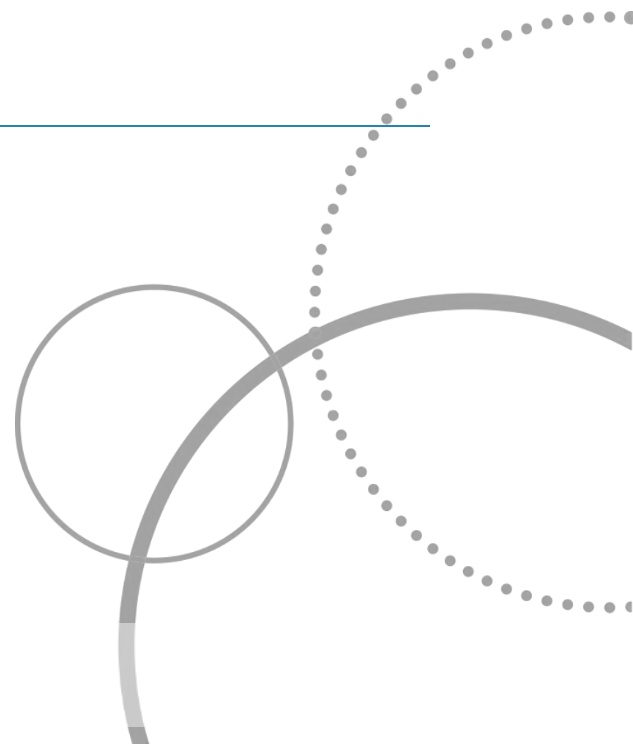
Noise Impact Assessment

Client:

Project/Proposal No: 4458

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V1	2021-11-01	GM	Alasdair Baxter	Alasdair Baxter [Add note e.g. First issue]

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1. Introduction

1.1 Background

Bucleuch Property ('the Applicant') are seeking planning permission for a development on land at Sheriffhall South, Gilmerton Road / Melville Gate, Dalkieth, ('the Proposed Development') in the Midlothian Council (MC) administrative area.

A hybrid application is to be submitted as follows:

- Full Planning Permission for the erection of Business (Class 4) development, and ancillary Drive-Thru Coffee Shop, with associated car parking, access, infrastructure and landscaping proposals; and
- Planning Permission in Principle for Business (Class 4), Storage & Distribution (Class 6) development with ancillary offices (detailed matters of landscaping, layout, appearance and scale are reserved for subsequent approval).

The Proposed Development site is situated on a greenfield site which has been allocated for commercial-led development within the Local Development Plan. The site lies to the south of Sherrifhall Roundabout and is bordered by the A7 to the west, Old Dalkeith Road to the north and Melville Gate Road to the east.

ITPEnergised has been appointed by Ironside Farrar on behalf of the Applicant to undertake an assessment of potential noise impacts associated with operation of the Proposed Development.

1.2 Effects Scoped Out

1.2.1 Changes in Road Traffic Noise Levels

The Design Manual of Roads and Bridges (DMRB) provides scoping criteria for the evaluation of operational noise from a road. With reference to the DMRB scoping criteria provided in **Section 2.2.2** and traffic data provided, the contribution of HGVs to traffic noise does not meet 'reasonable stakeholder expectation' for an operational noise assessment. From the traffic data provided (**Appendix A**), the Proposed Development will not cause a change in the Basic Noise Level (BNL) of 1dB $L_{A10,18hr}$ in the do-minimum opening year (DMOY) compared to the do-something opening year (DSOY). The Proposed Development will also not cause a change in the BNL of 3dB $L_{A10,18hr}$ in the do-something future year (DSFY) compared to the DMOY. The Proposed Development also does not involve the construction of new road links within 600 m of Noise Sensitive Receptors (NSRs). Operational phase changes in traffic noise levels will therefore be not significant and have been scoped out of this assessment.

1.2.2 Construction Phase

It is assumed that any construction noise will be of short duration and can be mitigated through the implementation of good practice measures during the construction period. It is proposed that assessment of construction phase noise will therefore be scoped out.

1.3 Scope of Assessment

The scope of the assessment has included the following:

- Consultation with MC Environmental Health Services to confirm the scope and methodology for the NIA;
- Prediction of operational noise levels from the Proposed Development;
- Assessment of the potential impacts associated with the Proposed Development upon existing residential receptors in accordance with BS 4142:2019; and



- Identification of mitigation measures if required.

1.4 Study Area and Noise Sensitive Receptors

Maps and aerial images of the site and its surroundings have informed the selection of an appropriate study area for the assessment. The closest Noise Sensitive Receptors (NSRs) in each direction were identified, and a study area adopted which includes these NSRs.

Noise levels due to the Proposed Development at more distant NSRs will be lower than those at the closest NSRs, therefore compliance with the target levels at the closest NSRs will entail compliance at those more distant. The identified NSRs are provided in **Table 1**, and NSRs and the extent of the study area are shown in **Figure 1**.

Table 1 – Identified NSRs

NSR ID	NSR name & rationale for selection	X	Y
NSR1	Farmhouse near A6106	331853	667100
NSR1	Property on Lugton Brae to the east of the Proposed Development	331994	667912
NSR3	Property on Elginhaugh Gardens to the south of the Proposed Development	332510	667623

2. Relevant Guidance and Advice

2.1 Planning advice note PAN1/2011: Planning and noise

PAN1/2011 (Scottish Government, 2011), sets out a series of noise issues for planning authorities to consider when making decisions on planning applications. A Technical Advice Note (TAN) on Assessment of Noise (Scottish Government, 2011) has been published to accompany PAN 1/2011. In Appendix 1 of the TAN are codes of practice for the assessment of various sources of noise. BS4142 is identified as appropriate guidance for the evaluation of industrial and commercial noise sources.

The TAN recommends that the daytime period includes the hours 07:00 – 23:00 and the night-time period 23:00 – 07:00.

The TAN suggests that equivalent continuous noise level over a time period, $T (L_{Aeq,T})$, is a good general purpose index for environmental noise; this index is commonly referred to as the “ambient” noise level. It further notes that the $L_{A90,T}$ index is used to describe the “background” noise level.

2.2 Other Relevant Policy, Standards and Guidance

2.2.1 BS4142:2014+A12019 Methods for Rating and Assessing Industrial and Commercial Sound

BS4142 describes methods for rating and assessing sound from industrial or commercial premises. The methods detailed in the Standard use outdoor sound levels to assess the likely effects on people inside or outside a residential dwelling upon which sound is incident.



The Standard provides methods for determining the following:

- Rating levels for sources of industrial and commercial sound;
- Ambient, background and residual sound levels; and
- The audibility of tones in sound: 1/3 octave method.

These may be used for assessing sound from proposed, new, modified or additional sources of sound of a commercial or industrial nature.

The Standard makes use of the following terms:

Ambient sound level, $L_a = L_{Aeq,T}$ – the equivalent continuous sound pressure level of the totally encompassing sound in a given situation at a given time, usually from multiple sources, at the assessment location over a given time interval, T.

Background sound level, $L_{A90,T}$ – the A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90 percent of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels.

Specific sound level, $L_s = L_{Aeq,Tr}$ – the equivalent continuous sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, T.

Rating level, $L_{Ar,Tr}$ – the specific sound level plus any adjustment for the characteristic features of the sound.

Residual sound level, $L_r = L_{Aeq,T}$ – the equivalent continuous sound pressure level at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound, over a given reference time interval, T.

The Standard determines the degree of noise impact by comparison of the background noise level at NSRs in the absence of the Proposed Development (the specific source) with the ambient sound level when the specific source is operational.

Where particular characteristics such as tones, intermittency or impulsivity, are present in the noise emissions of the specific source, the Standard requires that “penalties” be added to the specific sound level to account for the increased annoyance that these can cause.

The following evaluation impact significance identifiers are provided in the Standard, in which the difference between the specific sound level and measured background level are considered:

- The greater the difference, the greater the magnitude of impact;
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact;
- A difference of around + 5 dB is likely to be an indication of an adverse impact;
- The lower the rating level, relative to the measured background level, the less likely that the specific sound source will have an adverse (or significant adverse) impact; and
- Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact.

2.2.2 Design Manual for Roads and Bridges (DMRB)

DMRB provides standards and advice regarding the assessment, design and operation of roads in the UK and sets out screening criteria, by which percentage changes in traffic flow can be related to a predicted change in road traffic noise and vibration. The guidance also provides significance criteria, by which the percentage of people adversely affected by traffic noise can be related to the total noise or vibration level due to road traffic, or the increase over an existing level.

DMRB provides a method for predicting the Basic Noise Level (BNL), a measure of the source noise level of a road. The BNL is a function of the composition, flow and speed of traffic and the quality of the road surface.



Changes in the BNL, arising from changes in traffic flow, may be used as a means of determining the significance of operational noise effects.

The following scoping criteria are provided for the evaluation of operational noise from a road:

1. is the project likely to cause a change in the BNL of 1dB LA10,18hr in the do-minimum opening year (DMOY) compared to the do-something opening year (DSOY)?;
2. is the project likely to cause a change in the BNL of 3dB LA10,18hr in the do-something future year (DSFY) compared to the DMOY?;
3. does the project involve the construction of new road links within 600m of noise sensitive receptors?; and
4. would there be a reasonable stakeholder expectation that an assessment would be undertaken?

With regard to a 'reasonable stakeholder expectation' for an operational noise assessment, DMRB notes an example where works involve changes to infrastructure but are not expected to give rise to significant environmental effect, such as smart motorway projects.

Where the response to any of the above scoping questions is 'yes' the scoping assessment shall make a recommendation on the scope of further assessment.

2.2.3 ISO 9613 Attenuation of sound during propagation outdoors, Part 1 and Part 2

ISO 9613 describes a method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. The method predicts the equivalent continuous A-weighted sound pressure level under meteorological conditions.

3. Method

3.1 Consultation with Midlothian Council

MC Environmental Health were consulted on the proposed scope and approach of the noise assessment. No response was received initially. Initial modelling undertaken prompted an update to scope of the assessment. It was found that even with a highly conservative noise model for the development, predicted noise levels were very low at the nearest Noise Sensitive Receptors (NSRs). Based on the predicted noise levels ITP Energised proposed to scope out a baseline noise survey and set a conservative assumed background level of 35 dB for the night-time period. The responding environmental health officer agreed with the updated scope and approach to the assessment.

Records of correspondence are provided in **Appendix B**.

3.2 Prediction of Operational Noise Levels

3.2.1 Source data

3.3.1 Details of the Proposed Development were provided by the developer, as follows:

- Layout of the Proposed Development;
- Details of plant and deliveries for the Class 3 unit; and
- Elevation drawings of all units.

The above information is provided in **Appendix C**. There are no details currently on any proposed external plant or deliveries to units. It is expected that there will be some external plant and deliveries to the Class 3 unit, which is expected to be a Costa Coffee drive thru supplying food and drink.



3.2.2 Prediction method and modelling assumptions

Given the use of all the Class 4 units and the Class 6 units are likely to be light industrial, general industrial or storage and distribution, the following assumptions have been made regarding prediction of operation noise of Proposed Development:

- Proposed units have been modelled as buildings in their proposed locations, using the proposed dimensions;
- The units have been assumed to have a worst-case internal noise level of 80 dBL_{Aeq,T}, equivalent to the Lower Exposure Action Value (LEAV) specified in the Control of Noise At Work Regulations 2005. This is considered to be a robust assumption, noise levels within the units will likely be substantially lower than this. The units were also modelled to run continuously, which is considered a conservative approach;
- Industrial units have been assumed to be constructed of single-skin steel cladding typical for commercial/industrial warehousing, giving a reduction of 25 dBR_w (roofs and walls) to internal noise levels using a specification provided by Kingspan for their standard cladding material;
- The external plant and delivery to the Costa Drive-Thru was modelled using source noise terms provided by the applicant. External plant was modelled to run continuously, and the delivery was modelled with an operating time of 60 minutes. These noise sources were modelled as point sources; and
- In a robust approach it was assumed that there will be 8 HGV movements per hour supplying the Class 6 storage and distribution units, these vehicles were modelled as a moving point source along a line using data held on file by ITP Energised.

A 3D model of the operational Proposed Development was constructed within noise prediction software CadnaA based on the proposed layout (see **Appendix C**), and noise levels were predicted at representative NSRs. The software enables prediction of noise levels under atmospheric conditions using the method provided in ISO9613. The locations of modelled noise sources are shown in **Figure 1**.

3.2.3 Model settings

Local topography has been included within the model using 50m terrain data.

A typical air temperature of 10°C and relative humidity of 70% have been assumed within the model. Ground absorption within the site has been assumed to be G=0.5, representative of mixed ground conditions.

3.3 Derivation of Rating Level

In accordance with BS4142, predicted specific levels can be corrected to rating levels by the addition of appropriate corrections or “penalties”. Noise from the Proposed Development will be largely masked by traffic noise from the surrounding road network. It is therefore proposed that no corrections will be applied to the rating level for this assessment.

3.4 Method of Evaluation

3.4.1 Target noise levels – operational phase

An assumed background noise level of 35 dB for the night-time has been agreed with MC for the evaluation of impacts. The proposed hours of operation of all units in the Proposed Development are currently unknown. In a robust approach, this assessment assumes that the Proposed Development operates fully during the night-time period (23:00 – 07:00) as defined in BS4142. Noise impacts have been evaluated against the night-time period only. Compliance with target levels during the night-time period denotes compliance during the daytime period, when background noise levels will be higher.



4. Results

4.1 Derivation of Target Noise Levels

In consultation with MC Environmental Health it was agreed that a rating level of up to 5 dB above the background level would not present a significant adverse impact. In agreement with MC environmental health, this assessment adopts a level of 35 dB +5 dB as a target level which the rating level should not exceed. The target level at all NSRs is provided in **Table 2**. In accordance with BS4142 the derived background level has been rounded to the nearest integer.

Table 2 – Derivation of target noise levels

NSR (representative NMP)	Target noise level (background +5), dB(A)
Night-time period – 23:00 – 07:00	
NSR1, NSR2, NSR3	40

4.2 Evaluation of Operational Noise Levels

4.2.1 Predicted operational noise levels

The specific noise level resulting from the operation of the Proposed Development has been predicted at identified NSRs. The predicted specific level, applied rating corrections and the derived rated levels at NSR1 are presented in **Table 3**. In accordance with the requirements of BS4142 the derived rated levels have been rounded to the nearest integer.

Table 3 – Predicted rating levels

NSR	Predicted specific level, $L_{Aeq,Tr}$	Rating Correction dBA	Rated Level, $dBL_{A,r}$
NSR1	24	0	24
NSR2	26	0	26
NSR3	22	0	22

No character corrections have been applied to the specific level (refer to **Section 3.3**).

4.2.2 Evaluation of Impacts – BS4142:2014+A12019 Assessment

Noise associated with operation of the Proposed Development has been evaluated at the closest NSRs in **Table 4**.



Table 4 – Evaluations of Impacts

Item	Level, dB	Notes
NSR1 – Night-time period 23:00 – 07:00		
Specific level	24	See Section 4.2
Rating correction	0	See Section 3.3
Rating level	24	See Section 4.2
Assumed background level	35	See Section 4.1
Excess of rating level over assumed background	-11	The derived rated level is 11 dB below the measured background level which is an indication of the Proposed Development having a 'low' impact.
Measurement uncertainty	-	Will not change outcome of assessment – refer to Section 4.2.4
NSR2 – Night-time period 23:00 – 07:00		
Specific level	26	See Section 4.2
Rating correction	0	See Section 3.3
Rating level	26	See Section 4.2
Assumed background level	35	See Section 4.1
Excess of rating level over assumed background	-9	The derived rated level is 9 dB below the measured background level which is an indication of the Proposed Development having a 'low' impact.
Measurement uncertainty	-	Will not change outcome of assessment – refer to Section 4.2.4
NSR3 – Night-time period 23:00 – 07:00		
Specific level	22	See Section 4.2
Rating correction	0	See Section 3.3
Rating level	22	See Section 4.2
Assumed background level	35	See Section 4.1
Excess of rating level over assumed background	-13	The derived rated level is 13 dB below the measured background level which is an indication of the Proposed Development having a 'low' impact.
Measurement uncertainty	-	Will not change outcome of assessment – refer to Section 4.2.4



4.2.3 Significance of noise impacts

At all NSRs, the rated noise level is well below measured background during the night-time period. BS4142 suggests that this is an indication of the Proposed Development having a low impact. The rating level at all NSRs meets the 'background +5 dB' target level agreed with MC Environmental Health (see **Section 4.1**).

4.2.4 Effect of uncertainty

The assumed background level (35 dB) was selected after reviewing the noise maps for Scotland of the surrounding area. The actual background level is likely to be higher therefore uncertainty is considered highly unlikely to change the outcome of the assessment.

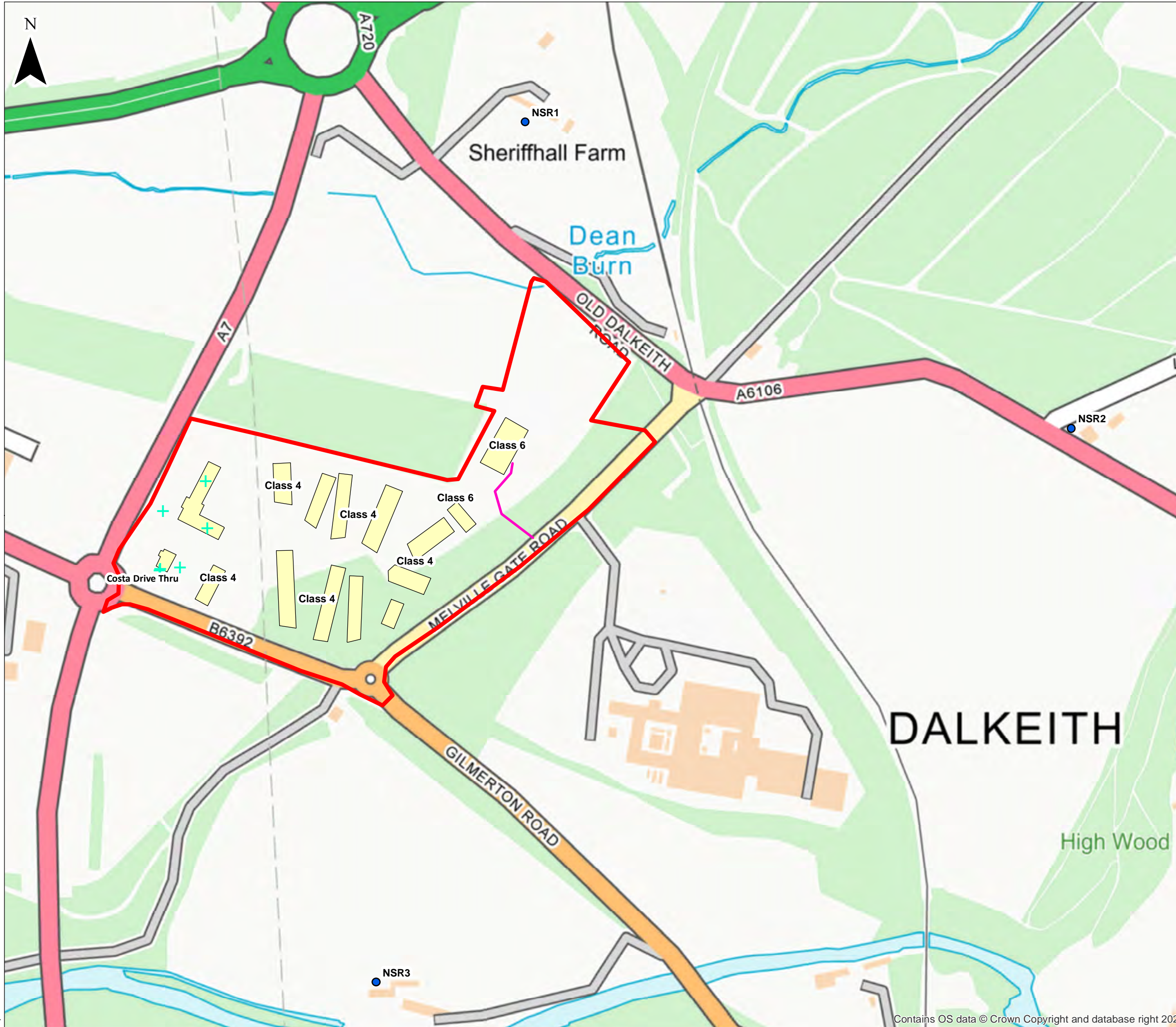
The prediction of operational noise impacts has been completed in accordance with recognised UK and international Standards. Prediction uncertainty associated with the ISO9613 method is limited given comparatively small distance of propagation and limited influence of topography. Conservative assumptions have also been applied to the source noise terms and modelled noise sources in the noise model. Uncertainty is therefore considered highly unlikely to change the outcome of the assessment.

5. Conclusion

ITPEnergised has undertaken a noise assessment in support of a Class 4, 5, and 6 development and ancillary class 3 / Sui Generis Drive Thru on land at Sheriffhall South, Gilmerton Road / Melville Gate, Dalkieth in the Midlothian Council (MC) administrative area. The assessment has comprised prediction and evaluation of operational phase noise levels from the Proposed Development in the context of BS4142:2014+A1:2019.

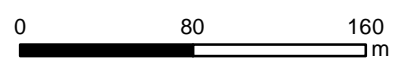
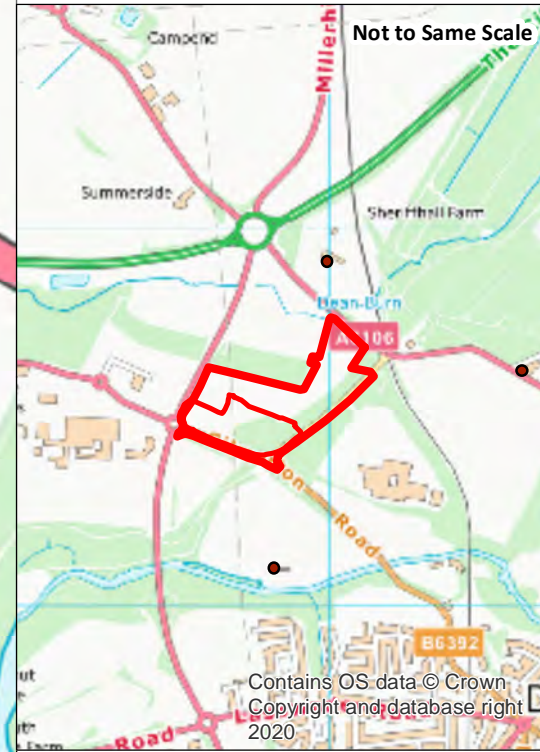
Operational noise levels due to the Proposed Development have been determined to meet the derived significance criteria during the night-time period and to be below the target background noise level at all identified representative NSRs. Predicted compliance during the night-time period will entail compliance during the daytime period, as traffic levels on the surrounding road network will be higher.

The assessment has therefore identified that noise from the Proposed Development will be below the target background noise levels, resulting in a low likelihood of significant noise impacts.



KEY

- Site Boundary
- NSRs
- Modelled Units
- + External Plant & Costa Delivery
- Deliveries to Class 6 Units



Scale 1:3,500 @ A3



Sheriffhall South
Noise Impact Assessment

Figure 1
Site Location, Layout
and Modelled Noise Sources



Appendix A – Traffic Data



Surveyed (2017 / 2018 / 2019 / 2021)					Projected (2023)					Committed (site to south of Gilmeron Road)					2023 plus committed					Proposed development					2023 plus committed plus proposed					% IMP 2026
Old Dalkeith Road west of Melville Gate																														
Site #1																														
2017																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	10879	184	1.69%	40	AADT24	15666	265	1.69%	40	AADT24	0	0	0.00%	40	AADT24	15666	265	1.69%	40	AADT24	32	0	0.00%	40	AADT24	15695	265	1.69%	40	0.19%
Old Dalkeith Road east of Melville Gate																														
Site #2																														
2021																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	10437	232	2.03%	40	AADT24	10552	214	2.03%	40	AADT24	134	0	0.00%	40	AADT24	10675	214	2.01%	40	AADT24	105	0	0.00%	40	AADT24	10779	214	1.99%	40	0.98%
Melville Gate Road																														
Site #3																														
2021																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	3950	50	1.16%	40	AADT24	3993	46	1.16%	40	AADT24	134	0	0.00%	40	AADT24	4116	46	1.12%	40	AADT24	137	0	0.00%	40	AADT24	4253	46	1.09%	40	3.33%
Gilmeron Road east of Melville Gate																														
Site #4																														
2019																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	5987	50	0.76%	40	AADT24	6148	47	0.76%	40	AADT24	185	0	0.00%	40	AADT24	6317	47	0.74%	40	AADT24	239	0	0.00%	40	AADT24	6557	47	0.72%	40	3.78%
Gilmeron Road passing site																														
Site #5																														
2021																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	6272	69	1.01%	40	AADT24	6341	64	1.01%	40	AADT24	861	0	0.00%	40	AADT24	7128	64	0.89%	40	AADT24	1023	0	0.00%	40	AADT24	8151	64	0.78%	40	14.36%
A7 South																														
Site #6																														
2018																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	20530	1138	5.54%	60	AADT24	21249	1178	5.54%	60	AADT24	300	0	0.00%	60	AADT24	21523	1178	5.47%	60	AADT24	417	0	0.00%	60	AADT24	21940	1178	5.37%	60	1.94%
Gilmeron Road west of A7 rbt																														
Site #7																														
2017																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	11023	572	4.74%	40	AADT24	15873	753	4.74%	40	AADT24	437	0	0.00%	40	AADT24	16272	753	4.63%	40	AADT24	356	0	0.00%	40	AADT24	16628	753	4.53%	40	2.19%
A7 north																														
Site #8																														
2018																														
Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)	Flow	# HGVs	%HGVs	Mean Speed (mph)							
AADT24	11658	724	6.21%	60	AADT24	12066	749	6.21%	60	AADT24	128	0	0.00%	60	AADT24	12183	749	6.15%	60	AADT24	245	0	0.00%	60	AADT24	12428	749	6.03%	60	2.01%



Appendix B – Records of Correspondence





From: Gregor Massie
Sent: 01 October 2021 17:04
To: environmentalhealth@midlothian.gov.uk
Cc: Alasdair Baxter <Alasdair.Baxter@itpenergised.com>
Subject: Proposed Mixed Use Development at Land at Sheriffhall South, Gilmerton Road Dalkeith (Planning Reference: 21/00416/PAC) - Noise Consultation

Dear Sir/Madam,

We have been appointed to undertake the noise quality impact assessment (NIA) for a proposed mixed-use development the ('Proposed Development') at land at Sheriffhall South, Gilmerton Road in Dalkeith ([HERE](#)) within Midlothian Council (MLC) administrative area.

The planning application is a hybrid planning application for the following (major development):

1. *"Full Planning Permission for the erection of Business (Class 4), Storage & Distribution (Class 6) development and Class 3 / Sui Generis Drive Thru Coffee Shop, with associated car parking, access, infrastructure and landscaping proposals; and*
2. *Planning Permission in Principle for Business (Class 4) and Storage & Distribution (Class 6) development with ancillary offices and associated access infrastructure works (detailed matters of appearance, landscaping, layout and scale are reserved for subsequent approval)."*

Please note that the use class mix is currently being confirmed against the layout.

Could you please review the proposed scope and methodology detailed below at your earliest convenience and confirm that these are acceptable.

Please do not hesitate to give me a call should you have any questions (07483355626)

Thank you and Kind Regards,

Gregor Massie

Proposed Scope

The proposed scope for the NIA is as follows:

- Consultation with MC Environmental Health Services to confirm the scope and methodology for the NIA;
- Characterisation of the background noise levels at existing receptors by undertaking daytime and night-time noise monitoring at up to three Noise Monitoring Positions (NMPs);
- Prediction of operational noise levels from the Proposed Development;
- Assessment of the potential impacts associated with the Proposed Development upon existing residential receptors in accordance with BS 4142:2019;
- Identification of mitigation measures if required; and
- Production of a stand-alone NIA and supporting technical figures suitable for submission to MC.

Our assessment will be undertaken in accordance with BS4142:2014. It is therefore proposed to stipulate that any noise associated with the proposed development should not exceed background+5 dB at noise



sensitive receptors in accordance with BS4142:2014+A1:2019.. If required, appropriate noise mitigation will be specified and reported in our assessment.

It is assumed that any construction noise will be of short duration and can be mitigated through the implementation of good practice measures during the construction period. It is proposed that assessment of construction phase noise will therefore be scoped out.

Proposed Development generated traffic is assumed to be negligible compared to existing traffic on the local road network. On that basis it is proposed to scope out the need to assess the change in noise levels associated with the Proposed Development generated traffic at existing noise sensitive receptors.

Baseline Noise Survey

The proposed monitoring locations are as follows:



NMP1 – to characterise background noise levels at the existing receptor for evaluation of industrial/commercial noise in accordance with BS4142.

NMP2 – to characterise background noise levels at the existing receptor for evaluation of industrial/commercial noise in accordance with BS4142.



Monitoring will be undertaken for at least 1 hour during the daytime and 30 minutes during the night-time for each NMP. If possible, we will leave noise kit running overnight at one NMP to attain a full set of data for the night-time period.

We would appreciate your swift response on confirming the NMPs, we are planning to undertake the survey in the next couple of few weeks.

Good afternoon Ian,

Thank you for calling me back earlier. As discussed I have set out our updated scope and methodology for the noise impact assessment for the proposed mixed use development at land at Sheriffhall South.

While undertaking initial modelling for the project, it was found that even with a highly conservative noise model for the development, predicted noise levels were very low at the nearest Noise Sensitive Receptors (NSRs). The highest predicted level was 26 dB. Based on these predicted noise levels we are therefore proposing to modify our scope for the Noise Impact Assessment. The updated scope is as follows:

- Prediction of operational noise levels from the Proposed Development;
- Assessment of the potential impacts associated with the Proposed Development upon existing residential receptors in accordance with BS 4142:2019;
- Identification of mitigation measures if required; and
- Production of a stand-alone NIA and supporting technical figures suitable for submission to MC.

It is considered highly unlikely that background noise levels at the closest NSRs will be lower than initial predictions (26 dB), it is therefore proposed to scope out a baseline noise survey. To confirm this, noise maps for the area and other NIAs in the surrounding area have been consulted. Traffic noise will be the dominant noise source in the surrounding area, and will likely mask any noise from the Proposed Development.

The ANC technical note on BS4142:2014+A1:2019 states that in a previous version of BS4142 background sounds levels of less than 30 dB and rating levels less than 35 dB are considered 'very low'. The technical note suggests that similar values would not be unreasonable in the context of the more recent version of the standard. It is therefore proposed to set a conservative target background level of 35 dB for the night-time period. A background of 35 dB is considered typical of a night-time noise environment dominated by transport noise sources.

It is assumed that any construction noise will be of short duration and can be mitigated through the implementation of good practice measures during the construction period. It is proposed that assessment of construction phase noise will therefore be scoped out.

Proposed Development generated traffic is assumed to be negligible compared to existing traffic on the local road network. On that basis it is proposed to scope out the need to assess the change in noise levels associated with the Proposed Development generated traffic at existing noise sensitive receptors.

If you have any queries or questions, please let me know.



Kind regards

Gregor

Hi Gregor

That all seems ok for you to proceed with the application for the proposed development referred to above on the basis that the predicted noise levels at the nearest sensitive receptors are very low.

Construction noise and proposed development traffic noise are assumed to be negligible also.

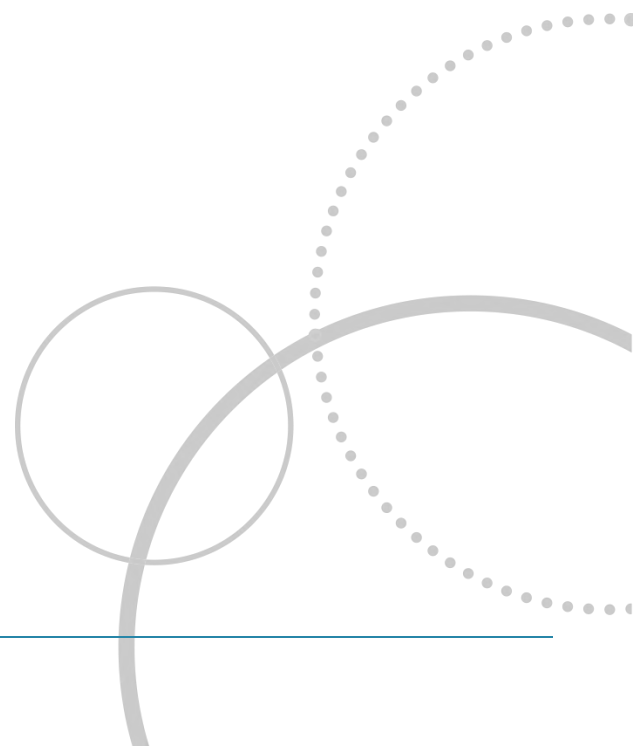
Kind Regards

Ian Wilson

Environmental Health Officer



Appendix C – Drawings and Source Noise Data



Planning Information for Drive Thru Costa Outlets

V6 – July 2020

Prepared for:

Costa Ltd

Prepared by:

Savills
2 Kingsway
Cardiff
CF10 3FD



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Appendices

Appendix 1 - Delivery Vehicle Information

Appendix 2 – Details of 'Behind the Beans' Corporate Responsibilities

Appendix 3 – HVAC Equipment



1. Introduction

- 1.1. This statement provides key information that can be used in support of planning applications by developers where a drive thru Costa unit is included within the proposals.
- 1.2. Costa operates three different drive-thru store formats. This statement is prepared specifically for the 1800sqft format. Costa should be contacted for alternative documentation for different store formats.
- 1.3. The intention is to provide consistent and helpful information to assist with the preparation and negotiation of planning applications, and to avoid permissions being granted with unsuitable conditions or ambiguous descriptions.
- 1.4. Further background or clarification can be sought from:
- Paul Williams
- Associate Director
- Savills
- Pjwilliams@savills.com
- Tel: 02920368906
- 1.5. Information is provided on the following:
- § Use Class – Standard definition
 - § Employee Numbers and Employment Information
 - § Operating Hours, Servicing and Refuse Arrangements
 - § Planning Issues
 - § Corporate Responsibilities
 - § Likely Onerous Conditions
- 1.6. Note that separate information is available on trip rates and customer travel behaviour from Costa's appointed transport consultants, TPA. This can be used to inform Transport Statements. Contact should be made in first instance with:

Nathan Hanks, Director, Transport Planning Associates, 020 3709 9407 | 07974 735881

2. Use Class – Standard definition

2.1. The preferred description for a planning application involving a drive thru Costa is as follows:

‘Coffee Shop with Drive Thru Facility’

2.2. References to specific use classes should be avoided if possible and if descriptions of applications are revised by the LPA on registration they should be monitored and changes sought where necessary, particularly if they contain any reference to A5 (Hot food takeaway).

2.3. If use class references cannot be avoided then the use should be referred to as a mixed A1/A3 coffee shop use, for the following reasons.

2.4. Costa Coffee outlets do not sell any hot food (other than Panini or a small range of baked or re-heated products considered ancillary to the main body of sales). The majority of sales are for hot and cold drinks, and cold food.

2.5. The principal consideration is the Use Classes Order 1987 (as amended). This defines the uses which fall within Class A1 and A3. The order defines Class A1 uses as follows:

“Class A1 Shop

Use for all or any of the following purposes:

- a. For the retail sale of goods other than hot foods
- d. The sale of sandwiches or other cold food for consumption off the premises
- g. For the display of goods for sale”

(Only relevant parts of the Class A1 use to the coffee shop type use are highlighted)

2.6. Class A3 is defined as:

“Use for the sale of food and drink for consumption on the premises”

- 2.7. Whilst now superseded Circular 03/2005 makes helpful reference to sandwich bars and coffee shops in relation to their use class as follows:

Sandwich bars

34. As indicated above in paragraph 12, in considering where individual uses fall, it is the primary purpose that should be considered. A sandwich bar does not necessarily cease to be in the shops class merely because, for example, it also sells a limited amount of hot drinks, hot soup or food that is heated up. Similarly, it is possible for a few sandwich bar customers to eat on the premises, including at tables within or outside their establishments (e.g. on the forecourt) without involving a material change of use. Provided that this is only an ancillary part of their business, the classification of the business as a sandwich bar would rightly remain in the A1: Shops use class where the retail sales element is the primary purpose.

Coffee Shops

36. Coffee shops will need to be considered on a case by case basis. Whether their primary purpose is as a shop, i.e. premises for the sale of beverages to be taken away, or as a café, where the primary purpose is consumption of beverages on the premises, or indeed whether it is a mix of both uses.

- 2.8. As the proposed coffee shop will not sell any significant volume of hot food and a significant proportion of the sales of sandwiches, confectionary and drinks are likely to be for takeaway purposes, there is a significant element of the use which would ordinarily fall within Class A1 (i.e. under the A1 definition of Sandwich Bars).
- 2.9. The proposed coffee shop will also have an element of seating whereby customers can consume food and drink on the premises. This adds an element of Class A3 use.
- 2.10. In England the A5 use class refers to hot food takeaways and should not be used at any time in relation to a Costa drive thru application. Any description including an A5 reference should be avoided as no primary cooking is undertaken on site. The A5 Use Class does not exist in Wales.
- 2.11. Circular 03/2005 offered the following guidance on determining which use classes any particular use falls within. At paragraph 12, the circular states that each case will also be a matter for individual determination by fact and degree. It says that the cause upheld that the first thing to consider in determining whether a material change of use has occurred is the existing primary use of the land. It states that:

12. The Courts have held that the first thing to consider in determining whether a material change of use has occurred (or will occur) is the existing primary use of the land. Each case will always be a matter for individual determination by fact and degree. In particular, local planning authorities will need to take into consideration more than just the amount of floor space occupied by the different uses. For example, in the case of a premises which incorporates restaurant use as well as pub or bar use, the local planning authority will need to determine whether the existing primary use of the premises is as a restaurant (A3), or as a drinking establishment (A4), or a mixed use. This will depend on such matters as whether customers come primarily to eat, or drink, or both. It is the main purpose of that use that is to be considered.

- 2.12. Consequently, in determining whether the proposed coffee shop use falls within either Class A1 or A3, or is in fact a mixed use will be determined by a proportion of different uses which make up the whole.
- 2.13. The conclusion that has been reached through a large body of planning permissions and appeal decisions that the most appropriate categorisation of the use is as a mixed A1/A3 coffee shop.
- 2.14. The floorspace cannot be disaggregated into specific A1 and A3 elements. The use is mixed across the planning unit.
- 2.15. It is recognised that in certain circumstances, landlords may wish not to be restricted to the specific nature of the A1/A3 use. In which case a description as an A3 use may be acceptable, but in such cases Costa must not be joint applicants. Savills should be consulted on any such cases.
- 2.16. The above applies to England and Wales albeit there is no Class A5 in Wales.
- 2.17. In the case of Scotland, the principal consideration is the Use Classes Order 1997 (As Amended). Whilst much of the above referenced legislation and guidance is not applicable in Scotland, the broad principle, namely that the coffee shop use is a hybrid of the traditional retail and food and drink uses, applies. For Scotland, the proposed use should therefore be described as either a combined or mixed Class 1 and Class 3 use.

3. Employee Numbers and Employment Information

3.1. A typical outlet will provide for 15 full/part time jobs with flexible shifts. This is typically the equivalent of 11 full time jobs. Also worth noting is that:

- Costa Limited do not use zero hours contracts;
- They are in full compliance with the European Working Time Directive;
- There is a bonus scheme for all employees;
- They have a high internal promotion rate; and
- All employees are paid at least the minimum wage for 25 + year olds regardless of age.

4. Operating Hours, Deliveries, Servicing and Refuse Arrangements

Opening Hours

- 4.1. Standard opening hours are 05:00 – 23:00, 7 days a week.
- 4.2. Staff will also be in the store 30 minutes prior to opening and 30 minutes after closure for set up and cleaning.

Deliveries and Waste Management

- 4.3. Dedicated core and fresh deliveries to take place three times per week from a mix of 18T and 15T rigid trucks.
- 4.4. Bunzl deliver non-perishable goods every fortnight (occasionally once a week). Fleet contains a range of vehicles .
- 4.5. Freshway deliver milk daily with the exception of Sundays. Typical vehicle 3.5T van.
- 4.6. Veolia waste trucks will remove waste from the site typically once but sometimes twice a week plus the collection of recycling twice per week. Veolia make use of a 26T vehicle.
- 4.7. **It is not the case that an individual store can determine what size of delivery vehicle is used and therefore sites should be planned and tracking drawings undertaken on the basis of the longest vehicle in the fleet (the 18T rigid truck). Consideration should also be given to the requirements of the heaviest vehicle in the fleet (the 26T rigid truck).**
- 4.8. Further details about delivery and refuse vehicles is included as Appendix 1.

Preferred Parking Arrangements

- 4.9. Parking arrangements are site specific, dependant on the site's location and the anticipated balance between drive thru and sit in users. The minimum requirement is for 30 parking spaces, one waiting bay and two disabled spaces.

5. Positive Ethical, Environmental and Corporate Credentials

Ethical Credentials

- 5.1. Costa was found to be the most ethical coffee brand at both the 2017 European Coffee Awards and the 2017 & 2019 Allegra Strategies Aware for the Most Ethical Coffee Brand.
- 5.2. Costa set up and manage the Costa Foundation, a charity set up 13 years ago providing community support to 10 countries where Costa's coffee beans are sourced from. The charity is funded by a direct charitable donation from customers & team members which is match-funded by Costa Limited and supplemented through store fundraising activities and payroll giving contributions. In the last 13 years the Foundation has transformed 85,000 lives in more than 80 school projects across 80 coffee growing communities.
- 5.3. In 2008, Costa moved to Rainforest Alliance certified coffee beans, sourcing coffee beans, tea & coco only from Rainforest alliance certified farms. The Rainforest Alliance works with farmers to ensure farms are run in an environmentally sustainable manner whilst also improving the livelihoods of works and their families.

Environmental Credentials

- 5.4. Costa's UK stores now divert 99% of their waste from landfill with 60% being recycled, and they are working on the rest.
- 5.5. Their in store waste solution ensures that stores segregate their food, plastics and cardboard from general waste. Food waste is then processed via Anaerobic Digestion, as a biomass fuel source. Any leftover waste is used as fertiliser for farmland.
- 5.6. Putting Coffee Grinds to good use: Costa works with Bio-bean to recycle waste coffee grounds into advanced biofuels and bio-chemicals, which can be used as a source of energy.
- 5.7. In many stores coffee grounds are also available for customers to take home to use as fertiliser on their gardens through the Ground for Grounds scheme.
- 5.8. All costa stores are able to collect coffee cups and coffee pods from any brand. These pods and cups are recycled in UK facilities into new products
- 5.9. In order to reduce single use packaging costa offer a 25p discount to customers using reusable coffee cups. We were also the first coffee shop to offer free water refills through the Refil.org scheme.
- 5.10. Costa partner with Fareshare to donate food surplus to good causes. We also work with Olio and Too Good to go to ensure any surplus food is diverted from the bins

Corporate Credentials

5.11. Costa has a strong and long-standing corporate responsibility programme called 'Good Together', through which they aim to be a 'force for good' across three pillars: teams and communities, customer wellbeing and energy and environment. Details are provided at Appendix 2.

- Costa are the first Coffee shop to sign the Keep Britain Tidy Litter commitment.
- Costa has a clear strategy to reduce energy in store through efficient light HVAC and equipment. This has led to a 46% reduction in energy usage
- 100% of the energy purchased by Costa is only sourced from REGO backed Renewable Energy
- We have a growing number of stores with onsite solar generation and have lead the industry in the development of Net zero energy retail units.
- Of coffee is roasted at our Basildon Roastery, The site was built in 2017 and is the only Roastery to achieve BREEAM "outstanding" The site also holds ISO50001 Energy management certification
- They are the only UK coffee shop to be 100% certified Rain Forest Alliance for coffee, tea and hot chocolate
- Smart Meters: It is important to Costa that as they grow the business they do not grow impact on the environment, and you cannot control what you don't measure. They have over 1000 AMR meters (Automatic Meter Reading). Where possible they install AMR meters going forward.
- They also fit individual circuit sub metering in many new build stores. This metering allows them to see how much power each piece of equipment affects energy consumption throughout the day.
- Equipment: Costa has continued to roll out low energy equipment such as our Astoria coffee machine which uses 27% less energy than its predecessors and the low energy dishwasher which not only saves energy but saves water as well.
- Engagement: Costa has been investing in educating its teams and every store receives its own energy report so they can better monitor and control the energy they use. All new stores get an Environment pack containing tips about how to save energy and recycle.

6. Planning Issues

Noise

- 6.1. Issues relating to noise are site-specific and are largely dependant upon land uses surrounding the site. Where appropriate, an independent acoustic assessment may be required to be submitted with an application assessing whether the proposed use will have a significant noise impact upon surrounding properties. Schemes can include acoustic barriers if deemed suitable.
- 6.2. Included at Appendix 3 is information on HVAC equipment typically used.

Litter Policy

- 6.3. In order to keep the exterior of the premises clean and tidy, drive thrus incorporate external litter bins and schedule regular litter checks by team members. This commitment is emphasised by Costa being the first coffee shop to have signed the Keep Britain Tidy litter initiative.

Cooking Smells/Extract

- 6.4. Local planning authorities may wish to use a planning condition which requires details of cooking equipment prior to the installation of any cooking onsite. Whilst such a condition is not onerous, the text below should be provided in order to avoid the need for it.
- 6.5. Applicants should stress that Costa sell hot and cold drinks for consumption on and off the premises, along with sandwiches, other cold food and confectionary.
- 6.6. No primary cooking is undertaken onsite and therefore the operation does not include any hot food production for either eat in or takeaway.
- 6.7. There is a small element of sales which involves the heating through and toasting of panninis and toasted sandwiches. These are made off site and heated through on a Merrychef microwave oven.

This generates no cooking odour or smoke and accordingly there is no requirement for specialist kitchen extraction, de-greasing, or de-odourising equipment.

- 6.8. Plant is limited to air conditioning units. Details included at Appendix 3.

Signage

- 6.9. Costa's signage pack comprises of a mix of internally illuminated and non-illuminated signage which have the purpose of maximising the site's visibility, guiding customers through the drive-thru lane, and displaying the full range of menu items.

- 6.10. Where signage is illuminated, this is via static means and has a maximum level of 600cd/sqm. It is controlled via a 'last man switch' which means that signage will be illuminated 30 minutes before opening and 30 minutes after store closure.

Level of Investment in town/area

- 6.11. Costa's operations have tangible economic benefits which can be highlighted in planning statements. They typically require £1million + of investment and pay 5 figure sums annually in business rates. Both the construction of the unit itself and Costa's subsequent operations will provide local jobs whilst also providing a welcoming and safe facility for the local area

7. Likely Onerous Conditions

7.1 The following could constitute onerous planning conditions subject to agreement between the parties

- Hours restrictions preventing opening to the standard hours of 05:00 – 23:00, 7 days a week;
- Hours that would prevent staff from being in the store 30 minutes prior to opening and 30 minutes after closure for set up and cleaning;
- Restrictions on delivery times;
- Any restrictions on percentages of sales for eat in or take-away purposes or that place a limit on the number of internal covers;
- Any prevention of sale of ancillary hot food;
- Requirements for extraction equipment.

Appendix 1 - Delivery Vehicle Information

Planning or Landlord restrictions on timing of deliveries, convoluted access routes, or weight/loading restrictions should be communicated to the Costa team.

The developer is required to provide tracking drawings for the largest of the following fleet vehicles:

- § **K & N** - Dedicated Costa Fleet for Core & Fresh deliveries. Delivery three times per week.

Delivery Fleet details:

18T truck Rigid 10.75m/2.59m/3.56m/ Wheelbase length 6.6m/No of axles 2 Axles/Turning circle dimensions – curb to curb turning circle is 21.59m/2.7m rear overhang, 1.4m front overhang – total vehicle length -10.75m
 15T truck rigid 9.75m/2.59m/3.75m
 3.5T van 6.32m/2.04m/3.1m

FRESHWAYS - Dedicated Costa milk delivery. Daily.

Delivery Fleet details:

3.5T van 6.32m/2.04m/3.1m

BUNZEL - Dedicated fortnightly delivery

Delivery Fleet details:

18T truck Rigid 8.10m/2.57m/3.73m/Wheelbase length 6.25m/No of axles 2 Axles/Turning circle dimensions – curb to curb turning circle is 20.63m/ 1.69m rear overhang, 0.87m front overhang – total vehicle length -9.9m

Veolia - Refuse collection up to 4 times per week (including recycling collections).

Delivery Fleet details:



Vehicle Details	
GVW	26,000kg
Wheelbase	5250mm
Turning Circle	16.9m (Wall to Wall)
Engine	Volvo D8K 280bhp
Gearbox	Allison MD3000 6 Speed Automatic
Fuel Tank	280 litre
Body Effective Volume	21.4m³
Hopper Volume	2.8m³ Sweep Volume
Front Axle Plated Weight	8000kg
Rear Bogie Plated Weight	19000kg

Dimensions	
Overall Length	10190mm (Including Binlift)
Overall Width	2530mm
Overall Height	3500mm
Front Overhang	1665mm
Rear Overhang	3285mm (Including Binlift)



Appendix 3 – HVAC Equipment



FFA-A9 / RZAG-A



Indoor Units			FFA35A9	FFA50A9	FFA60A9
Capacity	UK Total Cooling	kW	3.32	4.62	5.72
	UK Sensible Cooling	kW	2.28	3.40	4.20
	Nominal Cooling	kW	3.4	5.0	5.7
	Nominal Heating	kW	4.2	5.8	7.0
Seasonal Efficiency (EN14825) COOLING	Energy Label		A++	A++	A+
	Pdesign	kW	3.4	5.0	5.7
Seasonal Efficiency (EN14825) HEATING	Energy Label		A	A+	A+
	Pdesign	kW	3.10	3.84	3.95
Nominal Efficiency	SEER		6.40	6.30	5.80
	SCOP		3.80	4.01	4.04
Air Flow Rate (Cooling)	EER/COP		4.00 / 3.71	3.40 / 3.10	3.23 / 2.90
	High / Nom / Low	m ³ /sec	0.166/0.141/0.108	0.209/0.166/0.125	0.241/0.208/0.158
Dimensions (with Decoration Panel)	Height	mm	260 (306)	260 (306)	260 (306)
	Width	mm	575 (620)	575 (620)	575 (620)
	Depth	mm	575 (620)	575 (620)	575 (620)
Weight (with Decoration Panel)		kg	16 (18.8)	17.5 (20.2)	17.5 (20.2)
Sound Pressure (Cooling)	High / Nom / Low	dB(A)	34/30.5/25	38/34/27	43/40/32
	High / Nom / Low	dB(A)	34/30.5/25	39/34/27	43/40/32
Sound Power (Cooling)		dB(A)	51	56	60

Outdoor Units			RZAG35A	RZAG50A	RZAG60A
Dimensions	Height x Width x Depth	mm	820 x 1050 x 480	820 x 1050 x 480	820 x 1050 x 480
Weight		kg	52	52	52
Electrical Details	Power Supply	1ph	1ph	1ph	1ph
	Maximum Input Current (MCA)	A	14.43	14.63	16.70
	Max Fuse Size	A	16	16	20
Interconnection Wiring	Cable / Cable Size		3+1 / 1.5	3+1 / 1.5	3+1 / 1.5
Piping Connections	Liquid / Gas	Inches (mm)	1/4 (6.4) / 3/8 (9.5)	1/4 (6.4) / 1/2 (12.7)	1/4 (6.4) / 1/2 (12.7)
	Pipework				
Pipework	Maximum Length	m	50	50	50
	Maximum Vertical Rise	m	30	30	30
	Precharged to	m	30	30	30
	Additional charge	g/m	20	20	20
	Holding charge	kg	1.55	1.55	1.55
	Sound Pressure (Cooling)	Nominal	dB(A)	48	49
Sound Pressure (Heating)	Nominal	dB(A)	48	49	50
Sound Power (Cooling)		dB(A)	62	63	64
Operating Range (Cooling)	Min / Max	°CDB	-20 / +52	-20 / +52	-20 / +52
Operating Range (Heating)	Min / Max	°CWB	-20 / +24	-20 / +24	-20 / +24
Air Flow Rate (Cooling)	Nominal	m ³ /sec	0.918	0.918	0.918

ECA Eligible: •

Accessory Ref	Description
BYF060CW	Fully Flat Cassette (Decoration Panel - White (included as standard)
BRC1ES3A	Premium wired remote controller (Included as standard)
BRP060A81	WiFi adaptor for connection to on-line controller
BRC1HS19W	New - wired touch screen remote controller - White
BRC1HS19S	New - wired touch screen remote controller - Silver
BRC1HS19K	New - wired touch screen remote controller - Black
BDBHQ44C60	Sealing member for decoration panel FFA,FXZQ
BRC7EBS30W	Wireless remote for fully flat cassette Old Style decoration panel
BRC7FS30S	Wireless remote controller for Silver ceiling decoration panel
BRC7FS30W	Wireless remote controller for White ceiling decoration panel
BRYQ60AS	Integral PIR sensor for fully flat cassette Silver decoration panel. Enables energy saving functions
BRYQ60AW	Integral PIR sensor for fully flat cassette White decoration panel. Enables energy saving functions
BYFQ60B3	Fully Flat Cassette Decoration Panel - Old style (FFQ-B9V looks)
BYFQ60CS	Fully Flat Cassette Decoration Panel - Silver

Accessory Ref	Description
K.CGM	Condensing unit guard size 42-71
K.CG5	Condensing unit guard size 20-35
K.CWB90-2	Condensing unit bracket - up to size 71, max weight 90kg of ODU
K.DT1	Condensate drip tray for use with K.CWB90-2
K.R55	Wireless room mounted temperature sensor and receiver
K.KJC-D01	KNX interface for Sky Air and VRV systems
K.RCS0-1-4	Remote room mounted temperature sensor
K.RP1B5.7 and UK.FB2	Adaptor PCB for interlock to fresh air fan
K.RP4A5.3 and UK.FB2	Unit/group adaptor PCB for remote on/off, status indication and temperature setting
RS-SE	Service and configuration tool for K.R55
RTD-1D and UK.FB2	Enhanced function PCB for Sky Air and VRV. Duty rotation, Lead Lag control and heating interlock
RTD-2D and UK.FB2	Energy control PCB for Sky Air and VRV
RTD-NET and UK.FB2	Modbus interface PCB for Sky Air and VRV

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DAIKIN/HR/01/17/Design/01_Compiled/20180401

Planning Information for Drive Thru Costa Outlets



B-32 BLUEEVOLUTION SkyAir Alpha-series

FCAGG-G / RZAG-M

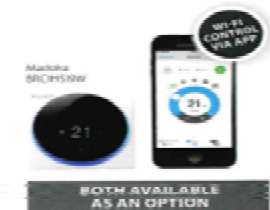
High COP Roundflow Cassette – Alpha



Indoor Units			Single Phase				3 Phase			
			FCAGG11G	FCAGG108E	FCAGG123E	FCAGG130S	FCAGG147G	FCAGG161G	FCAGG172D	FCAGG180D
Capacity	UK Total Cooling	kW	7.76	10.80	13.60	14.90	7.76	10.80	13.60	14.90
	UK Sensible Cooling	kW	5.32	7.44	9.30	10.25	5.32	7.44	9.30	10.25
	Nominal Cooling	kW	6.8	9.5	12.1	13.4	6.8	9.5	12.1	13.4
	Nominal Heating	kW	7.5	10.8	13.5	15.9	7.5	10.8	13.5	15.9
Seasonal Efficiency (EN14825) COOLING	Energy Label		A++	A++	-	-	A++	A++	-	-
	Pdesign	kW	6.8	9.5	12.1	13.4	6.8	9.5	12.1	13.4
	SEER		7.72	7.35	8.02	7.93	7.72	7.35	8.02	7.93
	Annual Energy Consumption	kWh	308	452	905	1014	308	452	905	1014
Seasonal Efficiency (EN14825) HEATING	Energy Label		A++	A++	-	-	A++	A++	-	-
	Pdesign	kW	4.70	9.52	9.52	9.52	4.70	9.52	9.52	9.52
	SCOP		4.61	4.81	4.52	4.44	4.61	4.81	4.52	4.44
	Annual Energy Consumption	kWh	1427	2771	2942	3002	1427	2771	2942	3002
Nominal Efficiency	EER/COP		4.39/4.70	5.06/5.04	4.30/4.47	3.89/4.26	4.39/4.70	5.06/5.04	4.30/4.47	3.89/4.26
	Air Flow Rate (Cooling)	High / Nom / Low	m ³ /sec	0.353/0.278/0.203	0.538/0.428/0.316	0.558/0.445/0.166	0.558/0.455/0.351	0.353/0.278/0.203	0.538/0.428/0.316	0.558/0.445/0.166
Dimensions (with Decoration Panel)	Height	mm	288 (348)	288 (348)	288 (348)	288 (348)	288 (348)	288 (348)	288 (348)	288 (348)
	Width	mm	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)
	Depth	mm	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)	840 (950)
Weight (with Decoration Panel)		kg	25 (30.4)	26 (31.4)	26 (31.4)	26 (31.4)	25 (30.4)	26 (31.4)	26 (31.4)	26 (31.4)
	Sound Pressure (Cooling)	High / Nom / Low	dBA	36/33/29	44/39/33	45/40/35	45/41/37	36/33/29	44/39/33	45/40/35
Sound Pressure (Heating)	High / Nom / Low	dBA	36/33/29	44/39/33	45/40/35	45/41/37	36/33/29	44/39/33	45/40/35	45/41/37
	Sound Power (Cooling)		dBA	53	61	61	61	53	61	61
Outdoor Units			RZAG118V1	RZAG1008V1	RZAG1238V1	RZAG1308V1	RZAG147V1	RZAG161V1	RZAG172V1	RZAG180V1
Dimensions	Height x Width x Depth	mm	990 x 940 x 320	1430 x 940 x 320	1430 x 940 x 320	1430 x 940 x 320	990 x 940 x 320	1430 x 940 x 320	1430 x 940 x 320	1430 x 940 x 320
Weight		kg	70	92	92	92	70	92	92	92
	Power Supply		1ph	1ph	1ph	1ph	3ph	3ph	3ph	3ph
Electrical Details	Maximum Input Current (MCA)	A	17.5	27.4	27.5	27.5	10.9	15.4	15.0	15.0
	Max Fuse Size	A	20	32	32	32	16	16	16	16
Interconnection Wiring	Core / Cable Size		3+E / 1.5	3+E / 1.5	3+E / 1.5	3+E / 1.5	3+E / 1.5	3+E / 1.5	3+E / 1.5	3+E / 1.5
Piping Connections	Liquid / Gas	inches (mm)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)	3/8 (9.5) / 5/8 (15.9)
	Maximum Length	m	55	85	85	85	55	85	85	85
Pipework	Maximum Vertical Rise	m	30	30	30	30	30	30	30	30
	Precharged to	m	40	40	40	40	40	40	40	40
Additional charge	Holding charge	g/m	Refer to Installation Manual				Refer to Installation Manual			
	Additional charge	kg	2.95	3.75	3.75	3.75	2.95	3.75	3.75	3.75
Sound Pressure (Cooling)	Nom / Night Quiet	dBA	46/42	47/44	50/44	51/44	46/42	47/44	50/44	51/44
	Nom / Night Quiet	dBA	49/42	51/44	52/44	52/44	49/42	51/44	52/44	52/44
Sound Power (Cooling)		dBA	64	66	69	70	65	66	69	70
	Operating Range (Cooling)	Min / Max	°CDB	-20/52	-20/52	-20/52	-20/52	-20/52	-20/52	-20/52
Operating Range (Heating)	Min / Max	°CWB	-20/18	-20/18	-20/18	-20/18	-20/18	-20/18	-20/18	-20/18
	Air Flow Rate (Cooling)	Nominal	m ³ /sec	0.983	1.166	1.383	1.383	0.983	1.166	1.383
ECA Eligible			•	•	•	•	•	•	•	•
Indoor Unit Trade Price (Includes: BRC1E53A + BYCQ140D)			£895.00	£1,012.00	£1,106.00	£1,328.00	£895.00	£1,012.00	£1,106.00	£1,328.00
Condensing Unit Trade Price			£1,354.00	£1,720.00	£1,894.00	£2,161.00	£1,396.00	£1,800.00	£1,981.00	£2,276.00
Total System Price			£2,249.00	£2,732.00	£3,000.00	£3,489.00	£2,291.00	£2,812.00	£3,087.00	£3,604.00

Accessories:

Accessory Ref	Description	Trade Price
BRC1E53A	Premium wired remote controller (Included as standard)	£86.00
BYCQ140D	Decoration panel (Included as standard)	£162.00
BRP069AB1	WiFi adaptor for connection to an in-line controller	£84.00
BRC1H319W	New - wired touch screen remote controller - White	£92.00
BRC1F319S	New - wired touch screen remote controller - Silver	£96.00
BRC1F319B	New - wired touch screen remote controller - Black	£100.00
BRC1F302P	Wireless remote controller	£174.00
BYGQ140A	Integral PCB adaptor for roundflow decoration panel. Enables energy saving functions	£173.00
BYCQ140CGP	Roundflow cassette decoration panel with self-cleaning filter	£253.00
BYCQ140CGFP	New Roundflow-cassette-decoration panel with fine self-cleaning filter	£353.00
BYCQ140DW	Roundflow cassette decoration panel - white with white louvers	£183.00
K.CGL	Condensing unit guard size 100-140 including RXYSQ	£404.00
K.CGM	Condensing unit guard size 42-71	£338.00
K.CWB140-2	Condensing unit bracket - size 100 to 140	£51.00
K.CWB90-2	Condensing unit bracket - up to size 71, max weight 90kg of ODU	£40.00
K.DT1	Condensate drip tray for use with K.CWB90-2	£61.00
K.DT2	Condensate drip tray for use with K.CWB140-2	£66.00
K.R55	Wireless room mounted temperature sensor and receiver	£102.00
KDBHQ558140	Sealing member for air discharge outlet	£103.00
KDDP35C160-1	Fresh air intake kit for up to 20% fresh air (Part 1)	£132.00
KDDQ35B140-2	Fresh air intake kit for up to 20% fresh air (Part 2)	£133.00
KLIC-DI	KNX Interface for Sky Air and VRV systems	£132.00
RRCS01-4	Remote room mounted temperature sensor	£43.00
KRP4AS3 and UK.FB2	Unit/group adaptor PCB for remote on/off, status indication and temperature setting	£106.00
RS-SE	Service and configuration tool for K.R55	£267.00
RTD-10 and UK.FB2	Enhanced function PCB for Sky Air and VRV. Duty rotation, Lead Lag control and heating interlock	£286.00
RTD-20 and UK.FB2	Energy control PCB for Sky Air and VRV	£286.00
RTD-NET and UK.FB2	Modbus interface PCB for Sky Air and VRV	£215.00



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HALLIDAY FRASER MUNRO
 CHARTERED ARCHITECTS & PLANNING CONSULTANTS

Project: **Woolston Industrial Site Development**
 Site: **Woolston Industrial Site**

Client: **Blackburn Property**
 Site: **Blackburn Property**

Site: **Blackburn Property**
 The Blackburn Property

Contract Reference: **1500 (A1) 11000 (A)**
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