P H A
Paul Horsley Acoustics Ltd
Acoustics & Noise Control Consultancy

Acoustic Report

Noise Impact Assessment for the Proposed
New ALDI Retail Store at Preston Street, Whitehaven
Planning Application No 4/23/2314/0F1

Our Reference – J3242

Revision - 1

Survey Dates – 25th and 30th August 2023

Report by – Paul Horsley MIOA

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Limitations

The assessments and interpretation have been made in line with legislation and guidelines in force at the time of writing, representing best practice at that time.

All of the comments and opinions contained in this report, including any conclusions, are based on the information obtained by Paul Horsley Acoustics Ltd during our investigations.

There may be other conditions prevailing on the site which have not been disclosed by this investigation and which have not been considered by this report. Responsibility cannot be accepted for conditions not revealed by the investigation.

Any diagram or opinion of the possible configuration of the findings is conjectural and given for guidance only and confirmation of intermediate ground conditions should be considered if deemed necessary.

Except as otherwise requested by the Client, Paul Horsley Acoustics Ltd is not obliged and disclaims any obligation to update the report for events taking place after:

a) the date on which this assessment was undertaken; and
b) the date on which the final report is delivered.

Paul Horsley Acoustics Ltd makes no representation whatsoever concerning the legal significance of its findings or to other legal matters referred to in the following report.

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CONTENTS

1.0 Agent

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2.0 Subject

Proposed New ALDI Retail Store
Land off Preston Street
Whitehaven

3.0 Aims

The aim of this report is to provide a noise impact assessment of the primary noise sources likely to be attributable to the proposed new build at the ALDI retail store.

The impact assessment will account for the noise sources produced by the store with respect to the closest existing and proposed future noise sensitive residential dwellings prior to works commencing and to inform the Planning Application accordingly.

Where necessary, provision of mitigation recommendations to achieve the design intent will be provided.

4.0 Proposed ALDI Store Location

For the purposes of this report the following assumptions are applicable to the proposed new ALDI store at Preston Street, Whitehaven for which this report is to be utilized.

- The new ALDI retail store will be located within its own bounded site.
- The proposed facility will have dedicated vehicle access from Preston Street to the west of the site.
- The car park will be located at the north and west of the store building.
- There will be a loading bay to the southern side of the store which incorporates a slope down to allow ground level loading directly into the store via a ramp.
- Any externally located fixed plant items will be positioned together inside a caged compound to the southern side of the site.
- Servicing of the store will be required using 4 No dedicated ALDI deliveries 24-hours daily.

Refer to Appendix B for details of the proposed site layout.

5.0 Site Location and Description of Noise Sources

The proposed new ALDI Whitehaven Store will be located on vacant land to the eastern side of Preston Street. The site is located to the southern side of Whitehaven town centre adjacent to the B5345, Preston Street.

The proposed store will comprise of a single storey shopping unit to the east of the site, having a service dock to the south, with a customer carpark area to the north and west of the store building. Access to the site will be gained from Preston Street to the north-west via the entrance to the site. The proposed fixed plant installation will be located to the south of the store building within a formed plant compound.

The site is bounded to the south-western corner of the site by existing residential premises at Bentinck Row. The southern boundary is formed by open land leading to Coach Road, with residential premises beyond. The western site boundary is formed by Preston Street, having commercial premises and an ASDA supermarket on the opposite side of the road. The northern site boundary is formed by a Home Bargains retail outlet, with the other retail premises and the existing ALDI Whitehaven store beyond (which will be replaced by this development). The eastern site boundary is formed by vacant land, leading to a gym and existing residential premises. The land directly beyond the eastern boundary is subject to a live planning application for the erection of 35 No residential houses under Planning Application No 4/22/2466/0F1, refer to Appendix C for details.

The primary noise sources within the vicinity of the site are due to traffic movements along the B5345, Preston Street and residual traffic noise from the local road network.

The existing ALDI Whitehaven store is open from 08.00 hours to 22.00 hours Monday to Saturday and Sunday 10.00 to 16.00. It is assumed that the new store will maintain the existing trading hours.

All fixed plant and equipment will operate to suit the opening hours with the refrigeration equipment operating 24-hours daily on a demand basis.

6.0 Noise Survey Pre-App Scoping Advice

Prior to undertaking the works, contact was established with the Environmental Health Department (EH) at Cumberland Council (CC) in order to discuss the assessment methodology.

The agreement is outlined in brief as follows:

- Baseline to be completed over several days including weekday and weekend monitoring.
- Assessment of HGV deliveries and fixed plant to be in accordance with BS4142:2014+A1:2019 and considered at the closest existing sensitive receptors.

Subsequent correspondence received from CC, dated 12 February 2024, has requested that noise from the applicant site likely to affect the proposed residential premises will require inclusion within assessment to demonstrate amenity protection has been considered accordingly.

7.0 Guidance on the Assessment of Noise Levels

For the Standards and guidelines to be fully understood it is necessary to provide explanatory information relating to the individual documents noted and their inter-relationship where appropriate.

7.1 BS4142:2014+A1:2019 'Method for Rating and Assessing Industrial and Commercial Sound'.

The standard describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:

a) Sound from industrial and manufacturing processes:

b) Sound from fixed installations which comprise mechanical and electrical plant and equipment:

c) Sound from the loading and unloading of goods and materials at industrial and / or commercial premises: and

d) Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and / or commercial site.

The methods described in this British Standard use outdoor sound levels to assess the effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident. The standard compares sound from industrial / commercial sources with the background sound level.

In addition to the above, the standard states "Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level." Such features are considered by adding a correction to the specific sound level depending on the extent to which the distinguishing acoustic characteristics will attract attention. The standard states the following:

Tonality: For sound ranging from not tonal to prominently tonal the Joint Nordic Method gives a correction of between 0 dB and +6 dB for tonality. Subjectively, this can be converted to a penalty of +2 dB for a tone that is just perceptible at the noise receptor, +4 dB where it is clearly perceptible, and +6 dB where it is highly perceptible. Where the subjective method is considered not sufficient for the determination of tonality, alternative methods including a one third octave band analysis method, which assesses the L_{zeq} sound pressure level in a one third octave band against adjacent one third octave bands. If a tone is identified, then a tonal correction of +6 dB should be applied.

A tone can be considered present where the difference between both adjacent one-third octave bands is as follows.

- 15dB difference between 25Hz – 125Hz
- 8dB difference between 160Hz – 400Hz
- 5dB difference between 500Hz – 10,000Hz

Impulsivity: A correction of up to +9 dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of +3 dB for impulsivity, which is just perceptible at the noise receptor, +6 dB where it is clearly perceptible, and +9 dB where it is highly perceptible.

Other sound characteristics: Where the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of +3 dB can be applied.

Where tonal and impulsive characteristics are present in the specific sound within the same reference period then these two corrections can both be considered. If one feature is dominant, then it may be appropriate to apply a single correction. Where both features are likely to affect perception of response, the correction ought normally to be applied in a linear fashion.

Intermittency: When the specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time-period of length equal to the reference time interval which contains the greatest total amount of on time. This can necessitate measuring the specific sound over several shorter sampling periods that are in combination less than the reference time interval in total, and then calculating the specific sound level for the reference time interval allowing for time when the specific sound is not present. If the intermittency is readily distinctive against the residual acoustic environment, a penalty of +3 dB can be applied.

BS4142 provides guidance on the assessment of noise impacts as below:

The significance of sound of an industrial / commercial nature depends upon both the margin by which the rating of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs / will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.

Obtain an initial estimate of the impact of the specific sound by subtracting the measured background sound level from the rating level, and consider the following:

a) Typically, the greater this difference, the greater the magnitude of the impact.
b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where

the rating level does not exceed the background sound level, this is an indication of the specific sound source having a minimal impact, depending on the context.

The Standard introduces additional rating elements, these being subject assessments of tonality, and impulsivity of a sound source, with weighted rating values accordingly applied at the judgment of the assessor. The introduction of Uncertainty has been applied to the measured values; again, consideration of this is left to the professional executing the survey and assessment. However, steps are provided within the Standard for the reduction of uncertainty in both measurement and calculations of the sound source and rating value. Actual meteorological conditions are now required to be recorded and reported upon for the survey and report.

7.2 World Health Organization 1999 "Guidance for Community Noise"

This document provides a review of the effects of noise and a description of the principles of the WHO health criteria and guidelines for Community Noise.

The effects of noise in dwellings are identified as sleep disturbance, annoyance, and speech interference. For bedrooms, the critical effect is sleep disturbance. Indoor guideline values for bedrooms are 30 dB LAeq for continuous noise and 45 dB LAmax for sound events. At nighttime, outside sound levels about 1 metre from facades of living spaces should not exceed 45 dB LAeq, so that people may sleep with bedroom windows open. This value is equivalent to that specifies in the Criteria 12 document; however, it is now assumed that the noise reduction from outside to inside with the window open is 15 dB.

To enable casual conversation indoors during the daytime, the sound level of the interfering noise should not exceed 35 dB LAeq.

To protect the majority of people from being **seriously** annoyed during the daytime, the outdoor sound level from steady, continuous noise should not exceed 55dB LAeq on balconies, terraces and in outdoor living areas. To protect the majority of people from being **moderately** annoyed during the daytime, the outdoor sound level should not exceed 50 dB LAeq.

Table 1 of the document summarises the guideline values for community noise in specific environments and includes the noise indices to be adopted. Significantly, the corresponding time base to be used for the assessment is also included.

The relevant extracts of Table 1 are reproduced thus:

Specific Environment	Critical health effect (s)	LAeq dB	Time Base hours	LAMax dB
Outdoor living area	Serious annoyance, daytime, and evening	55	16	-
	Moderate Annoyance, Daytime, and evening	50	16	-
Dwelling, Indoors	Speech intelligibility & moderate annoyance daytime & evening.	35	16	-
	Sleep Disturbance, night-time	30	8	45
Outside Bedroom	Sleep disturbance, window open. (Outdoor Values)	45	8	60

7.3 Subjective Impression of Noise Level Differences

The following Table provides a semantic scale that may be used to "subjectively" rate changes in sound pressure level.

Subjective effect of changes in sound pressure level

Change in sound level dB	Change in Power		Change in apparent loudness
	Decrease	Increase	
3	1/2	2	Just perceptible
5	1/3	3	Clearly noticeable
10	1/10	10	Half / Twice as loud
20	1/100	100	Much quieter / louder

After Bies and Hansen

The above table is taken from Professor Colin H Hansen's publication "Fundamentals of Acoustics" page 41, for the Department of Mechanical Engineering, University of Adelaide.

This table also appears in "Engineering Noise Control" by Colin Hansen and David Bies, a comprehensive reference book, amongst others.

7.4 BS 8233:2014, 'Guidance on sound insulation and noise reduction for buildings'

This revised British Standard relates to the requirements necessary to allow for design of new building or refurbished buildings undergoing a change of use. It provides guidance on acoustic criteria appropriate for several types of internal spaces. The criteria as noted within 7.7.2, internal ambient noise levels for dwellings; are reproduced below:

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 LAeq, 16-hour dB	-
Dining	Dining Room / Area	40 LAeq, 16-hour dB	-
Sleeping (daytime resting)	Bedroom	35 LAeq, 16-hour dB	30 LAeq, 8-hour dB 45 LAMax dB

These criteria are based upon average data and exclude occasional event noise.

The external noise criterion is noted as 50 dB LAeq, T, with the upper guidance value of 55 dB LAeq, T which would be acceptable for noisier environments. It is also noted that these criteria may not be achievable in noisier environments where developments are desirable, such as city centres or urban areas adjoining strategic transport networks. Where this is the case, the development should be designed to achieve the lowest practicable levels for external amenity spaces but should not be prohibited.

7.5 Pro-PG Planning and Noise: New Residential Development

Pro-PG Planning and Noise: New Residential Development (Pro-PG) was published in May 2017 by the Association of Noise Consultants, Institute of Acoustics, and the Chartered Institute of Environmental Health.

Stage 2: Element 2 of Pro-PG sets indoor ambient noise levels for residential dwellings based on the guidance contained in British Standard 8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' (see table above in Section 5.2).

Note 4 to the above table states:

"A guideline value may be set in terms of SEL or LAFmax, depending on the character and number of events per night. Sporadic noise events could require separate values. In most circumstances in noise sensitive rooms at night (e.g., bedrooms) good acoustic design can be used so that individual noise events do not normally exceed **45 dB LAFmax more than 10 times a night**.'

Note 5 to the above table states:
'Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g., trickle ventilators) should be assessed in the "open" position and, in this scenario, the internal LAeq target levels should not normally be exceeded, subject to the further advice in Note 7'.

This is consistent with the guidance contained within the PPG, which states that:

'… consideration should also be given to whether adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time. In both cases a suitable alternative means of ventilation is likely to be necessary. Further information on ventilation can be found in the Building Regulations.'

7.6 National Planning Policy Framework (NPPF)

The revised NPPF published in September 2023 provides the following with regards to noise, set out at paragraph 185:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

In doing so they should:
a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.
b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."

It is clear that the NPPF seeks to limit the exposure of new development to unacceptable levels of noise, although the policy does not seek to prescribe what constitutes an unacceptable level of noise. Noise Policy Statement for England (NPSE)

The Department for Environment, Food and Rural Affairs (DEFRA) published the NPSE in March 2010.

The explanatory note of NPSE defines the terms used in the NPPF:

2.19 There are several key phrases within the NPSE aims and these are discussed below.

'Significant adverse' and 'adverse.'

2.20 There are two established concepts from toxicology that are currently being applied to noise impacts, for example, by the World Health Organisation.

They are:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effect on health and quality of life can be detected.

2.21 Extending these concepts for the purpose of this NPSE leads to the concept of a significant observed adverse effect level.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur."

The NPSE does not define the SOAEL numerically, stating at paragraph 2.22:

"2.22 It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."

There is no local or national guidance on how the three terms should be defined numerically, it is for the assessor to collate and interpret appropriate guidance on noise, such as may be found in British Standards, and correlate the guidance with the concepts of NOEL, LOAEL and SOAEL.

8.0 Survey Equipment

Remote noise monitoring data of the existing site was collected by NJD Environmental Associates between 25th and 30th August 2023 using the following equipment.

2 No ACOEM Fusion Class 1 Sound Level Meters, Serial No 11483 and 11484
Field Calibrator, Serial No 34675377
Weatherproof Wind Shields
Tripods

9.0 Survey Method

The remote noise monitoring was collected between 25th and 30th August 2023 to ascertain a representative "Baseline" noise climate for the site in accordance with the requirements of BS4142:2014+A1:2019.

The remote monitoring was conducted at the relevant site boundary locations with the sound level meter microphones mounted on tripods. The two locations selected for monitoring were as follows.

- Location 1 Eastern site boundary.
- Location 2 Western site boundary close to No 1 Preston Street premises.

Monitoring was conducted with the sound level meter microphones mounted on the tripod on site at 1.5m above the ground and at least 5m from any reflective surface.

LA_{eq}, LA_{10eq}, LA_{90} and LAF_{max} indices sound measurements were taken using the sound level meters set to also record a full 1/1 octave band frequency analysis for the duration of the individual monitoring sessions.

Data was collected contiguously for the duration of each session with a 15-minute exposure data stamp.

The measurement indices noted above are defined as follows:

LA_{eq}, T	the "A" weighted equivalent continuous noise level of sample period T.
LA_{10}, T	the "A" weighted level exceeded for 10% of sample period T.
LA_{90}, T	the "A" weighted level exceeded for 90% of sample period T.
LAF_{max}	The "A" weighted maximum level during the sample period T.

The sound level meter was calibrated before and after the measurements using the calibrator to ensure accuracy of the results. No variations were noted between calibrations and the results obtained can be deemed to be an accurate representation of the levels recorded.

Refer to Appendix A for a marked up locational plan of the existing site and survey positions.

10.0 Prevailing Weather Conditions

Date	Period	Temp °C	Relative Humidity Rh %	Barometric Pressure mb	Wind Speed mph	Wind Direction	Precipitation	Cloud Cover %
25.08.23	Day	18	66	1008	6	SW	None	50
	Night	9	79	1009	5	SW	None	50
26.08.23	Day	17	69	1009	4	NW	None	30
	Night	10	83	1009	3	W	None	30
27.08.23	Day	18	70	1011	8	WNW	None	40
	Night	11	96	1014	4	W	None	40
28.08.23	Day	17	71	1014	6	W	None	80
	Night	10	88	1013	3	SW	None	80
29.08.23	Day	17	88	1010	4	N	Light Rain	90
	Night	8	93	1008	6	W	None	50
30.08.23	Day	18	61	1008	10	NW	None	40
	Night	9	95	1009	2	S	None	30

11.0 Noise Survey Results

During the monitoring period noise samples were recorded using a 1/1 Octave Centre Band analysis. These monitoring samples were collected from the eastern and western site boundary locations.

The table of results on the following pages indicate the noise levels recorded for the site during the monitoring period.

The monitoring locations should be read in conjunction with the site layout appearing in Appendix A of this report.

12.0 Noise Survey Results Table

The remote noise assessment was completed between 25th and 30th August 2023.

Below is an overview table of results, summarising the baseline noise levels recorded.

Date	Daytime (0700 – 2300h)		Night-time (2300 – 0700h)	
	LAeq	LA90	LAeq	LA90
ML1				
Friday 25th August	47	41	42	34
Saturday 26th August	46	41	40	32
Sunday 27th August	47	40	41	33
ML2				
Friday 25th August	48	42	43	33
Saturday 26th August	47	41	42	32
Sunday 27th August	48	42	43	33
Monday 28th August	47	39	43	32
Tuesday 29th August	48	43	42	23
Wednesday 30th August	50	45	46	38

13.0 Results Analysis

The above baseline noise survey was conducted between 25th and 30th August 2023 with all data collected by NJD Environmental Associates. These periods were chosen as a representative period to reflect the typical noise climate for the area surrounding the proposed ALDI Whitehaven site.

The noise survey results obtained for the site can, therefore, be deemed to be representative of normal activities for the area and will be used as the base for analysis and assessment purposes below.

Assessments of the individual results indicate that the monitoring position selected is affected primarily by traffic noise sources from the movements along the Preston Street to the west. Seagulls and both civilian and military aircraft were also a signifcant contributor to the noise climate.

From the data acquired during the various assessment periods the following exposure noise levels have been established for the site.

Table of Exposure Levels

Location	Period	Noise Level
Location 1 Eastern Boundary	Daytime (0700 – 2300 Hrs)	LAeq, 16 Hours - 47 dB LA90 – 41 dB
	Night-time (2300 – 0700 Hrs)	LAeq, 8 Hours – 41 dB LAFmax - 64 dB LA90 – 33 dB
Location 2 Western Boundary	Daytime (0700 – 2300 Hrs)	LAeq, 16 Hours - 48 dB LA90 – 43 dB
	Night-time (2300 – 0700 Hrs)	LAeq, 8 Hours - 43 dB LAFmax - 70 dB LA90 – 35 dB

14.0 Introduced ALDI Noise Sources

The noise sources likely to be introduced resulting from the new ALDI Whitehaven store fall into 3 main categories.

1 Carpark Noise
2 Service Yard Noise
3 Fixed Plant Noise

Each assessment will deal with the proposed operational or activity period relevant to that specific source.

The actual construction phase of the development will not be assessed within this report.

It is assume store trading times will be as per the existing ALDI Whitehaven store, noted as follows.

Monday to Saturday	08.00 to 22.00
Sunday	10.00 to 16.00

It is also assumed that ALDI will require servicing availability 24-hours daily to maximise logistics capability.

14.1 Impact Assessment of Car Park Noise Sources

Noise from the customer car parking area will be assessed as commercial sources for the purpose of this assessment, and the activity associated with the noise will be restricted to the confines of the site only.

The activities of concern centre on arrival and departure of vehicles, together with associated events such as engine start-up, door slamming etc. To make predictions of the noise level at some distance from the car park, it is first necessary to establish reference noise levels. A series of detailed measurements have been conducted at several ALDI stores, the results of which are summarised in the following table. The results are based upon 1 metre from the activity for ease of comparison.

14.1.1 Car Park Noise Sources Table

Activity	Duration, s	LAeq, T	LAmax
Drive towards bay, park, switch-off engine, open door, get out and slam door shut	30	69 dB	88 dB
Open door, get in, close door, start engine, reverse out of parking space, drive away to distance	30	73 dB	85 dB

Calculations have been conducted to determine resultant noise levels at the closest noise sensitive receptors to the activities of the carpark area. Consideration has been made to the closest residential premises to the store main car park spaces.

Predicted $LAeq_{(1hr)}$ dB and LAmax dB façade noise levels are set out in the table below. Experience indicates that for car park usage during the trading hours, customers will seek to park as close to the store entrance as possible. However, for robustness the car parking spaces nearest to the residential premises have therefore been used as the datum for the predictions. For the purposes of this exercise, consideration of 10 No car parking bays in simultaneous use will be used to predict the noise levels at any noise sensitive receptors.

The relevant topography of the land, mean distance and any existing barriers will be accounted for in the assessments.

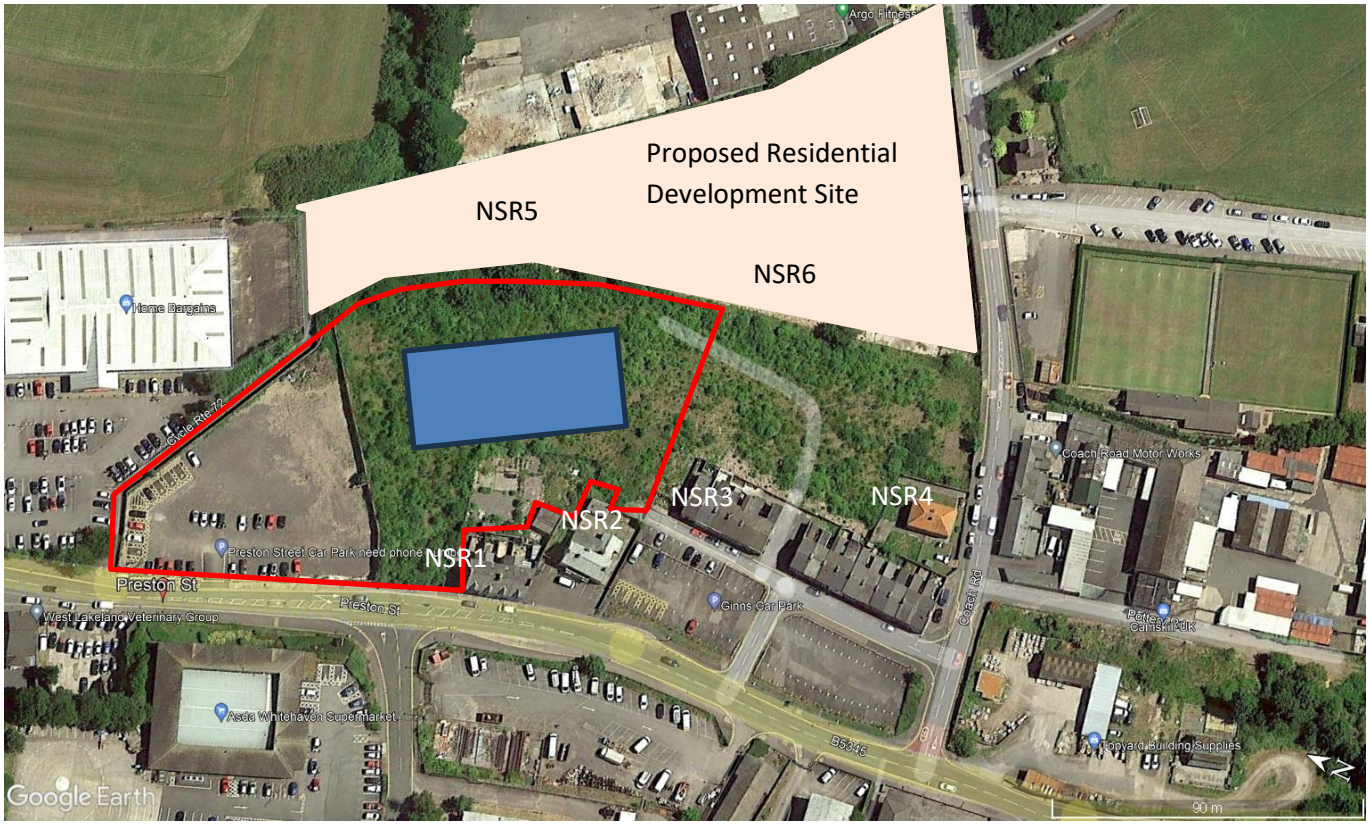
The following façade noise levels are calculated taking account of the "on-Time" of the activity defaulted to 1 hour, or 3600 seconds, and the natural attenuation due to distance to the recipient, assuming 20 Log r, dB for sound transmission.

14.1.2 Calculated Car Park Noise Contribution Levels

The following table indicates the calculated noise contribution levels of the car park activities at the closest noise sensitive residential premises, based upon consideration of a ground floor level window for daytime periods only.

Receptor Location ID	Receptor Position	Car Park Activity Contribution Noise Level	
		LAeq dB, 1 Hour	LAMax dB
NSR 1	No 1 Preston Street	42	60
NSR 2	No 10 Preston Street	34	55
NSR 3	No 19 Bentinck Row	28	49
NSR 4	No 1 & 2 Steel Houses, Coach Road	22	42
NSR 5	Plot No 31 Proposed Residential Development Site	10	29
NSR 6	Plot No 21 Proposed Residential Development Site	0	0

Site Plan Detailing NSR Locations



Refer to Appendix C for proposed adjacent residential development site plan and specific NSR locations.

The calculations are based upon a direct contribution of the car park activities without mitigation measures.

To determine the likely impact that the above contribution values will have on the existing noise climate when considered at the noise sensitive residential premises, it is necessary to provide an assessment based upon the above levels added to the baseline data results and provide a significance appraisal.

Below is a table representing the significance appraisal without additional mitigation.

Receptor Location	Car Park Activity Contribution Noise Level		Baseline Noise Climate Daytime 07.00 to 23.00		With Car Park Noise Resultant		Variance		Significance Appraisal	Comment
	LAeq dB, 1 Hour	LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB		
NSR 1	42	60	48	71	49	71	+1	0	LOAEL	Low impact
NSR 2	34	55	48	71	48	71	0	0	NOEL	No impact
NSR 3	28	49	48	71	48	71	0	0	NOEL	No impact
NSR 4	22	42	48	71	48	71	0	0	NOEL	No impact
NSR 5	10	29	47	70	47	70	0	0	NOEL	No impact
NSR 6	0	0	47	70	47	70	0	0	NOEL	No impact

As can be seen from the above table the calculated significance appraisal of the customer car park use indicates that there will be no cumulative increase in background due to the carparking activities and as such no loss of existing amenity.

There is only 1 No instance where there is a minimal increase in the baseline noise climate due to the proposed car park activity noise following the development of the ALDI Whitehaven store.

This is the +1 dB increase in noise climate when considered at the facade of the NSR 1, No 1 Preston Street, which is not likely to produce any audible variance above the existing noise climate for the area.

The sound introduced will be in context with the existing area noise climate, determined as mainly traffic flow, therefore, the source is not likely to be either noticeable or acoustically difference from the existing soundscape and as such not likely to give rise to any adverse comment from the nearby residential premises.

No additional mitigation measures are recommended for the car park perimeter.

14.2 Impact Assessment of Store Servicing Noise Sources

It is considered appropriate to assess noise from delivery vehicles, unloading of delivery vehicles and pallet returns. The methodology underpinning the assessment of these noise sources is discussed in the following sections.

14.2.1 Prediction of Servicing Noise

It is proposed that access to the store service dock will be obtained from Preston Street to the west of the site into the car park and onward to the eastern side to the service yard area.
There are two types of deliveries to an ALDI store; Deliveries from local suppliers will take place during normal opening hours and, ALDI own vehicles, which are up to 4 No per day and ALDI prefer unrestricted 24-hour periods for these vehicles, where possible, to allow maximum logistics flexibility.

It should be noted at this stage that there is usually only space available for 1 No vehicle to access the store service dock at any one time, therefore, if multiple deliveries are considered for a store they would be on separate occasions and an as such there would be no cumulative noise associated with deliveries to the store.

Taking account of the Local Supplier deliveries, usually for bread, milk, and other produce supplies, would take place during normal opening hours and take place at the loading dock. As such these deliveries are usually provided by smaller vehicles and would not impose any additional noise above that already assessed for general customer car park activities. No further assessment of this type of delivery will be necessary.

If we consider the ALDI own delivery vehicle, up to 4 per day, assumed to be an articulated lorry making use of the loading dock only, we must model the activity in full to determine if the noise generated is acceptable for out of hours periods.

For the purposes of calculations, it is taken that the delivery vehicle will approach the store along Preston Street. The delivery vehicle will then continue into the car park and then along the eastern service road and reverse down the loading bay ramp at the southern side of the building such that the rear of the vehicle faces the back of house stores area. Upon completion of the off-loading process the vehicle drives away from the loading dock in a forward direction along the service road and through the car park, turning onto Preston Street.

It is understood that produce will be unloaded onto a dedicated loading dock inside the building. The complete offloading operation varies depending upon the produce being delivered, however, the average time to offload takes approximately 35 minutes. It is taken that produce cage movements may occur during this unloading activity, however, their movements would be contained within the vehicle trailer only and not exposed to the environment as they are offloaded directly from the vehicle trailer into the store. In addition to the above, the assessment allows for a certain time of general off-loading activities, such

as moving plastic pallets, movement of produce, etc. Again, all movements are contained within the trailer or internally within the store, with no external noise sources.

The delivery process can therefore be modelled as several elements, vehicle arrival, unloading and vehicle departure, internal trailer cage movements, and general off-loading activities. Considering arrivals and departures, the path taken by the delivery vehicle has been modelled as a series of straight-line segments to approximate the path travelled by the vehicle. HGV noise emissions have been assumed as constant and independent of vehicle speed since tyre noise is not significant in comparison to noise from the engine and exhaust. Calculations assume point source radiation as the vehicle travels along each segment, with a correction then applied to account for the time of traverse. This approach has been derived from observations of vehicle manoeuvring operations at numerous ALDI stores. Source and receiver heights of 2.0 metres has been used corresponding to the most exposed windows of the nearest NSR to the service yard.

Regarding unloading, fixed source positions have been taken for both the unloading and the transfer of goods into the store. Point source attenuation has been assumed throughout. Noise levels have been assumed as continuous throughout the entire unloading operation.

A summary of a typical unloading process for a chilled goods delivery, together with the activity noise levels is given in the table below. The data has been taken from our latest relevant activity noise measurements obtained at similar ALDI sites. The use of reverse horns and cab chiller noise is included within the data gathered for all deliveries and are not isolated event noise sources within the data.

14.2.2 Summary of Noise Levels for Servicing Activities

Activity	Typical Event Duration (Seconds)	Mean Distance	LAeq	LAmax
HGV arrives on site	25	10 metres	64 dB	77 dB
Manoeuvre to loading dock	55	10 metres	65 dB	71 dB
Open trailer and loading bay doors	10	25 metres	50 dB	62 dB
Lower ramp to trailer deck	22	25 metres	50 dB	52 dB
Unloading of produce by powered pallet truck, all internally within the delivery trailer to the loading dock.	1200	10 metres	54 dB	65 dB
General offloading activities into store	1200	10 metres	54 dB	65 dB
Raise ramp from trailer deck. Close trailer doors and RSD.	69	25 metres	53 dB	67 dB
HGV departs loading dock	25	10 metres	69 dB	80 dB

Using the table of data above, delivery noise calculations have been conducted for the 4 No existing receptor positions from this activity as well as considering the proposed residential development site to the east.

The following façade noise levels are calculated taking account of the "on-Time" of the activity defaulted to 1 hour, or 3600 seconds, for daytime periods, and 15-minutes, or 900 seconds for nighttime periods, and the natural attenuation due to distance to the recipient, assuming 20 Log r, dB for sound transmission correction.

14.2.3 Impact Assessment

The assessment locations have been taken as the windows of premises determined as likely to be affected by the servicing of the store and assessed at varying distances from the loading dock.

Un-Mitigated Store Servicing Results Overview

Daytime

Receptor Location	Servicing Activity Contribution Noise Level	
	LAeq dB 1-Hour	LAMax dB
NSR 1	27	N/A
NSR 2	26	N/A
NSR 3	27	N/A
NSR 4	19	N/A
NSR 5	22	N/A
NSR 6	36	N/A

Nighttime

Receptor Location	Servicing Activity Contribution Noise Level	
	LAeq dB 15-Min	LAMax dB
NSR 1	26	48
NSR 2	31	47
NSR 3	32	47
NSR 4	25	44
NSR 5	23	49
NSR 6	36	49

To determine the likely impact that the above contribution values will have on the existing noise climate when considered at the noise sensitive residential premises, it is necessary to provide an assessment based upon the above levels added to the baseline data results and provide a significance appraisal.

Below is a table representing the significance appraisal without additional mitigation.

Daytime

Receptor Location	Servicing Activity Contribution Noise Level		Baseline Noise Climate Daytime 07.00 to 23.00		With Servicing Noise Resultant		Variance		Significance Appraisal	Comment
	LAeq dB 1-Hour	LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB		
NSR 1	27	N/A	48	N/A	48	N/A	0	N/A	NOEL	No impact
NSR 2	26	N/A	48	N/A	48	N/A	0	N/A	NOEL	No impact
NSR 3	27	N/A	48	N/A	48	N/A	0	N/A	NOEL	No impact
NSR 4	19	N/A	48	N/A	48	N/A	0	N/A	NOEL	No impact
NSR 5	22	N/A	47	N/A	47	N/A	0	N/A	NOEL	No impact
NSR 6	36	N/A	47	N/A	47	N/A	0	N/A	NOEL	No impact

Nighttime

Receptor Location	Servicing Activity Contribution Noise Level		Baseline Noise Climate Nighttime 23.00 to 07.00		With Servicing Noise Resultant		Variance		Significance Appraisal	Comment
	LAeq dB 15-Min	LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB		
NSR 1	26	48	43	70	43	70	0	0	NOEL	No impact
NSR 2	31	47	43	70	43	70	0	0	NOEL	No impact
NSR 3	32	47	43	70	43	70	0	0	NOEL	No impact
NSR 4	25	44	43	70	43	70	0	0	NOEL	No impact
NSR 5	23	49	41	64	41	64	0	0	NOEL	No impact
NSR 6	36	49	41	64	42	64	+1	0	NOEL	No impact

As can be seen from the above table the calculated significance appraisal of the servicing of the store indicates that there will be no cumulative increase in background due to the servicing activities and as such no loss of existing amenity during daytime and nighttime periods.

14.2.4 BS4142:2014+A1:2019 Assessment – NSR 3 – 19 Bentinck Row

The following BS4142:2014+A1:2019 assessment is based upon the resultant noise levels determined above for the worst-case identified existing residential premises. The relevant assessment reference time periods will be used accordingly for the rating, 1-hour daytime and 15-mins nighttime.

Description	Indices	Sound Level Daytime	Sound Level Nighttime	Comments
Resultant Contribution Due to Specific Servicing Process	dBA	27 dB	32 dB	
Residual Sound Level baseline recordings	L_{Aeq}	48 dB	44 dB	Traffic dominant source.
Background Noise Level	L_{A90}	43 dB	35 dB	Background level consisted of the above.
Proposed specific sound source	L_{Aeq}	27 dB	32 dB	Non applicable as this is a calculated value.

Acoustic feature correction when observed at residential premises		+0 dB +3 dB +3 dB	+0 dB +0 dB +3 dB	Intermittency * Tonality ** Impulsivity ***
Rating Level		33 dB	35 dB	
Background Noise Level	L_{A90}	43 dB	35 dB	
Excess of Rating over background sound level	Delivery - BG	**= -10 dB**	= **0 dB**	
The excess rating values of -10 dB for daytime and 0 dB for nighttime periods which are at or below the existing background activities and is classified as not producing any adverse impact due to the servicing process when considered outside the premises of No 19 Bentinck Row.				
Uncertainty of the assessment There is uncertainty in the calculation as it is based upon a noise value with a correction applied which may account for a minimal variation in the actual values for the delivery process. The uncertainty is not significant, and the values are in context with the actual area. The measurements presented indicate that the confidence of the rating for the specific source since the values used are based upon monitored data of actual deliveries to comparable sites and the background is based upon measured values during weather conditions considered acceptable for executing measurements.				

The above assessed rating values are based upon un-mitigated site conditions.

Rating values of -10 dB daytime and 0 dB at night are achieving the target values of not exceeding the existing background, and therefore classified as providing no adverse impact and not likely to give rise to justifiable complaints.

The justification for each acoustic penalty is provided below.

- *Intermittency – No penalty has been applied as the sound is not intermittent in nature when considered against the baseline noise in context.
- **Tonality – A +3dB tonality penalty has been applied to the assessment since the reverse horns used by ALDI logistics are tonal units producing a pure tone output, however, when observed at the residential premises these tonal horns will be just perceptible when compared against the existing sound scape and as such are in context. Reverse horns would be disabled for nighttime deliveries, therefore, penalty not applicable.
- ***Impulsivity – A +3 dB impulsivity penalty has been applied as the sound produced by the reverse horns could be perceived as impulsive when compared against the current background noise climate. However, this will only just be perceptible against the current noise climate. Reverse horns would be disabled for nighttime deliveries, therefore, penalty not applicable.

14.3 Impact Assessment of Fixed Plant Noise Sources

Fixed plant items associated with an ALDI development include refrigeration and ventilation equipment. The following plant items are proposed to be installed within a wire plant cage externally to the store adjacent to the loading dock assembly to the south of the store.

Plant Item	Typical Location	Operational Mode
Condenser Units	Plantroom / Service Yard Area	24-Hours
General Ventilation Fans	Plantroom and Back of House Areas	Variable dependent upon area served. Usually store trading periods.

If we assume that these units are required to serve the chilled produce cases, then it is also feasible to assume that they would operate 24-hours on a demand basis.

Taking account of the plant relative to the noise sensitive receptors, all 6 No locations will be assessed for robustness.

Calculations show that for simultaneous operation of the plant will produce resultant noise levels at the receptor as follows for both daytime and nighttime periods.

The activities have been taken as 1m from the facade of the premises with a varying degrees of barrier attenuation, included as applicable.

The following façade noise levels are predicted taking account of the natural attenuation due to distance to the recipient, assuming 20 Log r dB.

A fixed plant installation location correction will be applied, as necessary.

The noise data for the proposed plant installation at the ALDI Whitehaven site is as follows:

Reference	Plant	Sound Pressure Level Data, dB
A	CLADE Reach-in Pack	32 dBA at 10m
B	CLADE Gas Cooler	32 dBA at 10m
C	Panasonic Freezer Unit	36 dBA at 10m
D	Panasonic Chiller Unit	33 dBA at 10m
E	Vaillant ASHP Unit 1	35 dBA at 10m
F	Vaillant ASHP Unit 2	35 dBA at 10m
G	Vaillant ASHP Unit 3	35 dBA at 10m

The resulting calculated cumulative un-mitigated noise level results for all external plant items operating simultaneously when considered at the residential premises is as follows:

Un-Mitigated Fixed Plant Results Overview

Receptor Location	Fixed Plant Contribution Noise Level, dBA		Baseline Noise Climate LA90 dB		With Fixed Plant Noise Resultant, dBA		Variance		Significance Appraisal Daytime		Significance Appraisal Nighttime	
	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime	Daytime	Nighttime				
NSR 1	25	25	43	35	43	35	0	0	NOEL	No impact	NOEL	No impact
NSR 2	36	36	43	35	44	39	1	4	LOAEL	Low impact	SOAEL	Significant impact
NSR 3	40	40	43	35	45	41	2	6	LOAEL	Low impact	SOAEL	Significant impact
NSR 4	30	30	43	35	43	36	0	1	NOEL	No impact	LOAEL	Low impact
NSR 5	27	27	41	33	41	34	0	1	NOEL	No impact	LOAEL	Low impact
NSR 6	36	36	41	33	42	38	1	5	LOAEL	Low impact	SOAEL	Significant impact

Comparison of the above calculated noise levels due to fixed plant operations with the pre-existing background level indicates that there is low impact on the residential premises at NSR 1, NSR 4, and NSR 5 for both daytime and nighttime periods. Based upon this, no additional mitigation measures are required when assessed for the plant noise transmission at these locations to preserve the existing amenity of the residents is preserved following development.

However, the residential premises located directly to the south and west of the fixed plant installation, NSR 2, NSR 3 and NSR 6 will be unduly affected by the noise associated with the plant noise for both daytime and nighttime periods. Based upon this additional mitigation measures are required when assessed for the plant noise transmission in an easterly direction to ensure that the existing amenity of the residents is preserved following development.

14.3.1 BS4142:2014+A1:2019 Assessment (Un-Mitigated) – NSR 3 – 19 Bentinck Row

The following BS4142:2014+A1:2019 assessment is based upon the resultant noise levels determined above for the worst case affected residential premises, determined as 19 Bentinck Row, to the south of the fixed plant compound.

Description	Indices	Sound Level Daytime	Sound Level Nighttime	Comments
Resultant Contribution Due to Specific Fixed Plant	dBA	40 dB	40 dB	
Residual Sound Level baseline recordings	L_{Aeq}	48 dB	44 dB	Traffic is the dominant source.
Background Noise Level	L_{A90}	43 dB	35 dB	Background level consisted of the above.
Proposed specific sound source	L_{Aeq}	40 dB	40 dB	Non applicable as this is a calculated value.
Acoustic feature correction when observed at residential premises		+0 dB +3 dB +0 dB	+3 dB +3 dB +0 dB	Intermittency * Tonality ** Impulsivity ***
Rating Level		43 dB	46 dB	
Background Noise Level	L_{A90}	43 dB	35 dB	
Excess of Rating over background sound level	Plant - BG	**= 0 dB**	**= +11 dB**	
The excess rating values of 0 dB for daytime and +11 dB at night are at or above the existing background activities and are classified as likely to produce an adverse impact due to the fixed plant operations when considered outside the premises of No 19 Bentinck Row to the south.				
Uncertainty of the assessment There is uncertainty in the calculation as it is based upon a noise value with a correction applied which may account for a minimal variation in the actual values for the fixed plant. The uncertainty is not significant, and the values are in context with the actual area. The measurements presented indicate that the confidence of the rating for the specific source since the values used are based upon monitored data of actual fixed plant to comparable sites and the background is based upon measured values during weather conditions considered acceptable for executing measurements.				

The justification for each acoustic penalty is provided below.

- *Intermittency – A +3 dB penalty has been applied to the nighttime operation of the plant as this as the sound produced by the plant is not steady state and subject to on/off situations likely to result in a minimal intermittent audibility when considered against the baseline noise and context. No penalty has been applied for daytime periods as there is not likely to be any adverse audibility in context the pre-existing background noise climate.

- **Tonality – A +3 dB tonality penalty has been applied to the assessment since the plant is likely to be audible and produce a minimal tonality due to the nature of the plant itself consisting of ventilation equipment and fans. These items will be just perceptible when compared against the existing sound scape and as such is in context.

- ***Impulsivity – No impulsivity penalty has been applied as the sound produced by the fixed plant as the units operate without any impulsive output.

The above assessed rating values are based upon un-mitigated site conditions.

Rating values of 0 dB daytime and +11 dB at night are not achieving the target value of achieving the existing background, and therefore classified as providing any adverse impact and as such likely to give rise to justifiable complaints.

Based upon these findings additional mitigation measures will be required to allow 24-hour operation of the plant as the plant and will give rise to loss of existing amenity for the residential premises of No 19 Bentinck Row positioned to the south of the development.

15.0 Mitigating Noise Control Recommendations

Accounting for the 3 No specific noise sources likely to be introduced because of the ALDI Whitehaven store, it can be determined that the above assessments of the general un-mitigated activity noise levels have been assessed as producing noise levels below the design target limits set taking account the pre-existing baseline noise climate for the site in the majority of cases.

It has been shown that the store car park will not give rise to any increase in background during daytime operational periods and no mitigation is necessary to preserve the amenity of the residents.

The servicing of the store can be completed daily during daytime and nighttime periods without giving rise to any loss of amenity for the nearby residential premises. No additional mitigation measures are required to allow servicing operations to commence accordingly.

The fixed plant noise has been assessed and shown to operate above the pre-existing background levels for both daytime and nighttime periods and the residential premises located directly to the south, east and west of the plant compound. It is recommended that additional mitigation measures should be included to reduce the noise levels accordingly.

The recommendation for the fixed plant is for the installation of a 4-sided acoustic screen encompassing the plant compound at a minimum height of 2.75m above the compound floor level.

15.1 Post Mitigation Contribution Assessment

The assessment below has considered the ALDI Whitehaven development as a whole with all operations taking place simultaneously, including car park use, store serving and fixed plant operations.

The noise contribution values include the sound reduction provided by the recommended mitigation measures noted above.

Where there is a '0' in the cell that value represents a zero contribution at the specific receptor position.

The assessment assumes that the car park will only take place during daytime periods.

ALDI Whitehaven Development Noise Contribution (Including Mitigation) - Daytime

Receptor Location	Car Park Activity Contribution Noise Level		Servicing Activity Contribution Noise Level		Mitigated Fixed Plant Contribution	Total ALDI Whitehaven Daytime Noise Contribution		Baseline Noise Climate Daytime 07.00 to 23.00		Variance		Significance Appraisal	Comment
	LAeq dB 1 Hour	LAMax dB	LAeq dB 1 Hour	LAMax dB	LAeq dB Daytime	LAeq dB	Worst-Case LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB		
NSR 1	42	60	27	N/A	10	42	60	48	71	0	0	NOEL	No impact
NSR 2	34	55	26	N/A	21	35	55	48	71	0	0	NOEL	No impact
NSR 3	28	49	27	N/A	25	32	49	48	71	0	0	NOEL	No impact
NSR 4	22	42	19	N/A	16	25	42	48	71	0	0	NOEL	No impact
NSR 5	10	29	22	N/A	14	23	29	47	70	0	0	NOEL	No impact
NSR 6	0	0	36	N/A	21	36	0	47	70	0	0	NOEL	No impact

ALDI Whitehaven Development Noise Contribution (Including Mitigation) - Nighttime

Receptor Location	Car Park Activity Contribution Noise Level		Servicing Activity Contribution Noise Level		Mitigated Fixed Plant Contribution	Total ALDI Whitehaven Nighttime Noise Contribution		Baseline Noise Climate Nighttime 23.00 to 07.00		Variance		Significance Appraisal	Comment
	LAeq dB 15-mins	LAMax dB	LAeq dB 15-mins	LAMax dB	LAeq dB Nighttime	LAeq dB	Worst-Case LAMax dB	LAeq dB	LAMax dB	LAeq dB	LAMax dB		
NSR 1	0	0	26	48	10	26	48	43	70	0	0	NOEL	No impact
NSR 2	0	0	31	47	21	31	47	43	70	0	0	NOEL	No impact
NSR 3	0	0	32	47	25	33	47	43	70	0	0	NOEL	No impact
NSR 4	0	0	25	44	16	26	44	43	70	0	0	NOEL	No impact
NSR 5	0	0	23	49	14	24	49	41	64	0	0	NOEL	No impact
NSR 6	0	0	36	49	21	36	49	41	64	0	0	NOEL	No impact

As can be seen from the resultant noise contribution levels for both day and nighttime periods, with inclusion of the recommended mitigation noise control measures, the design intent will be achieved and there will be no loss of amenity for the surrounding noise sensitive residential premises.

16.0 ALDI Whitehaven BS8233:2014 Appraisal

The BS8233:2014 Standard provides specific noise criteria for internal spaces of residential premises to ensure that the amenity of the residents is acceptable for enjoyment of the dwelling space without any disturbance.

The internal noise criteria limits are described in Section 7.4 above, with the relevant table reproduced below.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living Room	35 LAeq, 16-hour dB	-
Dining	Dining Room / Area	40 LAeq, 16-hour dB	-
Sleeping (daytime resting)	Bedroom	35 LAeq, 16-hour dB	30 LAeq, 8-hour dB 45 LAMax dB

With a window slightly open for ventilation purposes, the accepted sound reduction is noted as -15 dB. Conversely, it can be determined that the external limits incident to a façade to achieve the internal limits are +15 dB on those values noted above for the specified location and time periods.

If we make an initial appraisal of the pre-existing noise climate for the NSR locations based upon the 'Resting Living Room' daytime period, and for nighttime periods, using the 'Sleeping Bedroom' value, we can determine that the pre-development noise climate is below the limits set within the standard, without development.

If we place the noise levels generated by the development and re-assess the noise climate considering the limits of BS8233:2014 we can determine the values as below.

ALDI Whitehaven Development Noise Contribution (Including Mitigation) - Daytime

Receptor Location	Post Mitigation Car Park Activity Contribution Noise Level		Post Mitigation Servicing Activity Contribution Noise Level		Post Mitigation Fixed Plant Contribution Noise Level, dBA	Baseline Noise Climate Daytime 07.00 to 23.00		Total ALDI Whitehaven Daytime Noise Contribution		Total Resultant With Development	BS8233:2014 External Limits Daytime		BS8233 Achieved Without Development	BS8233 Achieved With Development
	LAeq dB, 1 Hour	LAMax dB	LAeq dB, 1 Hour	LAMax dB	LAeq dB Daytime	LAeq dB	LAMax dB	LAeq dB	Worst-Case LAMax dB	LAeq dB	LAeq dB	LAMax dB	LAeq dB	LAeq dB
NSR 1	42	60	27	0	10	48	71	42	60	49	50	0	Yes	Yes
NSR 2	34	55	26	0	21	48	71	35	55	48	50	0	Yes	Yes
NSR 3	28	49	27	0	25	48	71	32	49	48	50	0	Yes	Yes
NSR 4	22	42	19	0	16	48	71	25	42	48	50	0	Yes	Yes
NSR 5	10	29	22	0	14	47	71	23	29	47	50	0	Yes	Yes
NSR 6	0	0	36	0	21	47	71	36	0	47	50	0	Yes	Yes

ALDI Whitehaven Development Noise Contribution (Including Mitigation) - Nighttime

Receptor Location	Post Mitigation Car Park Activity Contribution Noise Level		Post Mitigation Servicing Activity Contribution Noise Level		Post Mitigation Fixed Plant Contribution Noise Level, dBA	Baseline Noise Climate Nighttime 23.00 to 07.00		Total ALDI Norton (Malton) Nighttime Noise Contribution		Total Resultant With Development	BS8233:2014 External Limits Nighttime		BS8233 Achieved Without Development	BS8233 Achieved With Development
	LAeq dB	LAMax dB	LAeq dB	LAMax dB	LAeq dB Nighttime	LAeq dB	LAMax dB	LAeq dB	Worst-Case LAMax dB	LAeq dB	LAeq dB	LAMax dB	LAeq dB	LAeq dB
NSR 1	0	0	26	48	10	43	70	26	48	43	45	60	Yes	Yes
NSR 2	0	0	31	47	21	43	70	31	47	43	45	60	Yes	Yes
NSR 3	0	0	32	47	25	43	70	33	47	43	45	60	Yes	Yes
NSR 4	0	0	25	44	16	43	70	26	44	43	45	60	Yes	Yes
NSR 5	0	0	23	49	14	41	64	24	49	41	45	60	Yes	Yes
NSR 6	0	0	36	49	21	41	64	36	49	42	45	60	Yes	Yes

Based upon the results table above, it can be concluded that there will be no alteration to the pre-existing noise levels within the residential premises surrounding the site following the development.

The noise sources introduced are primarily traffic related (car park and servicing) and as such can be deemed as in context with the pre-existing noise climate. These specific noise sources, resulting from the 'With development' are therefore, anonymous in nature when compared to the existing background. The fixed plant noise sources, which operate 24-hours on a demand basis, have been mitigated accordingly and result in no elevation in the noise climate when considered at the closest receptors, maintaining the amenity of those residents.

Based upon the above appraisal it has been shown that the inclusion of the ALDI Whitehaven development, including the mitigation measures recommended, will have no adverse impact or undue loss of existing amenity of the noise sensitive premises and that there will be no alteration to the existing BS8233:2014 values for these locations.

17.0 Report Summary

This report has assessed the potential noise sources likely to be introduced into the area because of a new proposed ALDI Whitehaven development.

Use has been made of the Pre-App Scoping advice provided by the Local EHO, including relevant National and International Standards along and the monitored pre-development noise climate for the area. The baseline data gathered by NJD Environmental Associates in August 2023 has been used with regards providing limiting noise levels set for typical site fixed plant, equipment, and activities for both daytime and nighttime periods.

Based upon the results from the baseline noise survey for the area design target noise limits have been used for the ALDI Whitehaven site, for the activity under consideration to the closest noise sensitive positions both existing and the recently approved change of use residential development.

Impact noise assessments have been conducted for the prime sources associated with the ALDI Whitehaven development. These sources include noise associated with carparking activities, servicing noise and fixed plant and equipment noise.

It has been concluded, through extensive acoustic assessments and appraisals, that the noise from all introduced sources, following development and inclusion of recommended mitigating noise control measures, are not likely to have a detrimental effect, unduly impact or loss of any existing amenity for the closest residents, both existing and potential, for daytime or nighttime operations.

The design target limits set for the development have been demonstrated as being achieved with the mitigation measures recommended.

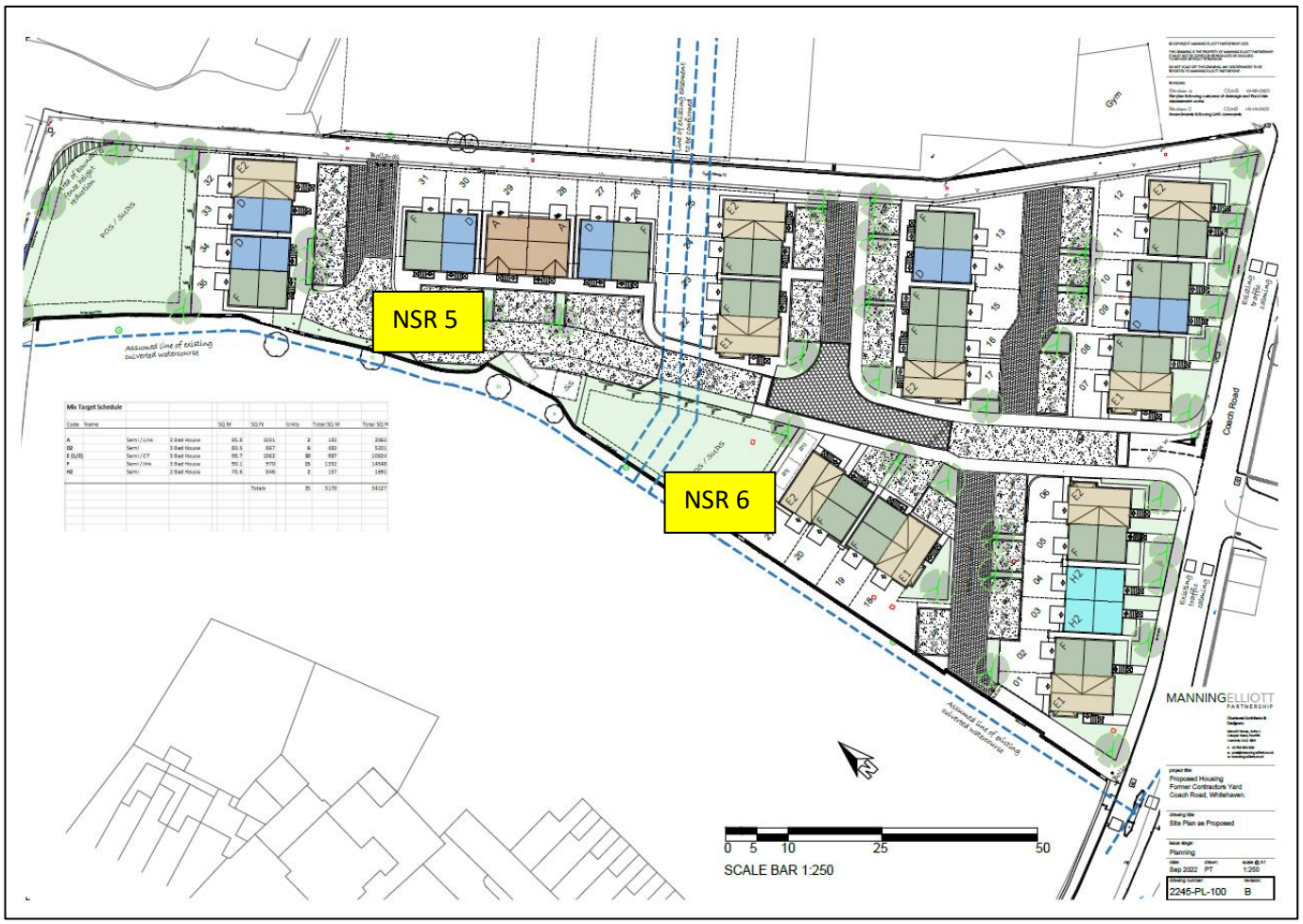
Appendix A Existing Site Location Plan and Monitoring Positions

Appendix B Proposed Site Location Plan

Key

Acoustic Screening Location -

Appendix C Adjacent Applicant Site Plan – App No 4/22/2466/0F1



Note - NSR Locations indicated in Yellow.