

Description Aldi Store Development. Victoria Avenue East, Moston

Date 1 November 2023

Issued by Peter Jackson MSc MIOA

Issued to Aldi Stores Limited

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1. INTRODUCTION

In connection with the construction of the new Aldi Store at Victoria Avenue East, Moston, the following response has been received from the Manchester City Council case Planning Officer, in relation to the discharge of planning conditions:

11 October 2023: *They (the Council Environmental Health Department) still require comments to address point 3 and more importantly, the assessment to address point 4 in terms of the noise limits at the boundary with the receptors. Until such time that this information is received and agreed, I am not in position to recommend the discharge of condition 4.*

Points 3 and 4 are detailed in an earlier e-mail note of 3 August 2023 from the planning officer:

Point 3: *Confirmed that details of the likely equipment to be used will be provided when the main Contractor is appointed.*

Point 4: *It seems that the noise limit at the boundary has been based on the noise from the piling rig. The noise limit at the boundary needs to be based on an assessment such as the ABC method referred to in BS5228 ? As previously stated, it is possible this needs to be developed once the contractor has been selected and they have produced the noise risk assessment.*

Accordingly, the Aldi contract manager (CTM Management) has asked Spectrum Acoustic Consultants to complete ambient noise measurements (prior to the commencement of construction works) to inform the setting of noise limits in accordance with the ABC methodology included in Annex E (Significance of noise effects), of BS 5228-1:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Part 1: Noise*.

This report provides the results of the ambient noise measurements and the determination of the threshold of potential significant effect at dwellings, as based on the ABC method.

2. BS 5228-1 SIGNIFICANCE OF NOISE EFFECTS

Annex E of the Standard provides example criteria for the assessment of the potential significance of noise effects from construction works, commonly associated with noise assessments undertaken for projects that require Environmental Noise Assessment (EIA), most associated with construction projects of significant size.

The ABC method provides a method for determining the potential significant effect at dwellings when the site noise level exceeds listed threshold values. The method is described in Figure 1.

E.3.2 Example method 1 – The ABC method

Table E.1 shows an example of the threshold of potential significant effect at dwellings when the site noise level, rounded to the nearest decibel, exceeds the listed value. The table can be used as follows: for the appropriate period (night, evening/weekends or day), the ambient noise level is determined and rounded to the nearest 5 dB. This is then compared with the site noise level. If the site noise level exceeds the appropriate category value, then a potential significant effect is indicated. The assessor then needs to consider other project-specific factors, such as the number of receptors affected and the duration and character of the impact, to determine if there is a significant effect.

Table E.1 Example threshold of potential significant effect at dwellings

Assessment category and threshold value period	Threshold value, in decibels (dB)		
	Category A ^{A)}	Category B ^{B)}	Category C ^{C)}
Night-time (23.00–07.00)	45	50	55
Evenings and weekends ^{D)}	55	60	65
Daytime (07.00–19.00) and Saturdays (07.00–13.00)	65	70	75

NOTE 1 A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

NOTE 2 If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq,T}$ noise level for the period increases by more than 3 dB due to site noise.

NOTE 3 Applied to residential receptors only.

^{A)} Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

^{B)} Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

^{C)} Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

^{D)} 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.

Figure 1: The ABC method of determining the threshold of significant effect at dwellings.

The table (E.1) is used as follows:

1. The ambient noise level (without construction works) is determined for the required period(s) by measurement.
2. The assessment category (A, B or C) is determined by reference to the established ambient noise levels, for each period, rounded to the nearest 5dB.
3. The threshold value for each daytime, evening and night time period is then defined for the appropriate category and applied to the residential receptor position.
4. A potential significant effect is indicated if the $L_{Aeq,T}$ noise level arising from the construction site exceeds the threshold value for the category appropriate to the ambient noise level.

If noise limits are to be set for the purpose of avoiding potential significant effect, the threshold value for the category appropriate to the ambient noise level can also be referenced.

3. AMBIENT NOISE LEVELS

3.1 Survey detail

A map showing the location of the Aldi Store and the surrounding environment is included as Figure 2. As shown on the map, the site is located between the M60 to the north and the A6104 (Victoria Avenue East). As would be expected, traffic noise from these busy roads dominates ambient noise levels at the closest dwellings to the site of the Aldi Store.



Figure 2: Map showing Aldi Site, ambient noise measurement positions and 'ABC method' daytime assessment Category.

Ambient sound levels have been measured at two positions (A & B) which are representative of the closest dwellings to Victoria Avenue East and the Aldi Store site:

- Position A On the flat roof of the existing building (previously the Imperial restaurant), with the microphone extended well above the roof line, so being representative of the ambient noise incident on the north and east elevations of the Eastgate Apartments.
- Position B On the south boundary of the Aldi site and on the north side of Victoria Avenue East approximately 10m back from the nearside carriageway, so being representative of the ambient noise incident on the south elevation of the Eastgate Apartments and the north side of the houses on the south side of Victoria Avenue East.

All measurements were completed across the 2-day period 31 October to 1 November 2023. Whilst there were some periods of drizzly light rain, wind speeds were light and suitable for noise measurement, particularly as the measured noise levels were in a relatively high range.

Measurement positions are illustrated on the photos included in Figure 2.



Figure 2: Photos showing measurement positions at defined receptor locations.

At position A, measurements were recorded by unattended logging of consecutive 15-minute samples over a 24-hour period, using a Bruel & Kjaer 2250 Light sound level analyser, serial number 3006954.

At position B, measurement samples of 15-minute duration were recorded by attended measurement during midday and afternoon periods, using a Bruel & Kjaer 2260 sound level analyser, serial number 1772232.

3.2 Measurement results

The noise measurements taken at Position A over a 24-hour period are included in Chart 1. Measurements are provided in terms of $L_{Aeq, 15 \text{ min}}$ (blue series) and L_{Amax} values (red dot markers).

The $L_{Aeq, 7}$ values for the daytime (0700-1900), evening (1900-2300) and night time (2300-0700), to the nearest dB, are shown by the light blue (dashed) series:

Daytime $L_{Aeq, 12 \text{ hour}}$	66dB
Evening $L_{Aeq, 4 \text{ hour}}$	64dB
Night time $L_{Aeq, 8 \text{ hour}}$	60dB

L_{Amax} values are shown to be in the range 65-75dB(A), with some values in the range 80-85dB.

Noise levels at Position A are dominated by continuous traffic noise, predominantly from the M6 to the north, with significant contributions from the A6104 to the south.

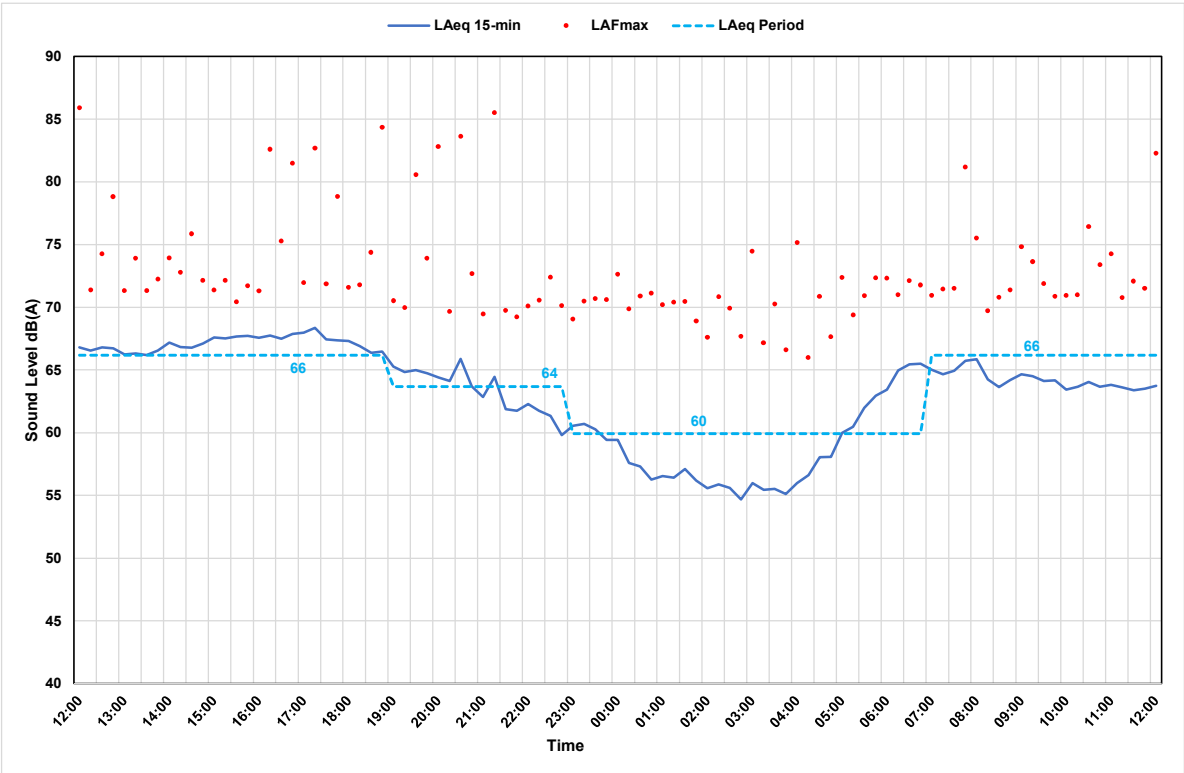


Chart 1 Position A noise measurements over 24-hour period.

Noise measurements completed at Position B are included in Table 1.

Start Date / Time	Sample Period Minutes	Noise Measurement dB(A)		Comment
		$L_{Aeq,T}$	LAmix	
31/10/23				
12:30	15	71.5	81.1	Traffic noise – A6104 (prominent) and M6. LAmix levels associated with individual noisy vehicles on A6104 (e.g., emergency vehicle / HGV / boy-racer car.
13:30	15	70.8	85.0	
14:00	15	72.6	80.8	
14:30	15	73.1	86.2	
15:15	15	71.2	78.8	
01/11/23				
12:15	15	68.1	80.5	
12:30	15	67.3	77.7	
13:00	15	67.7	78.8	
	dB average	70.8	78-86	

Table 2: Noise measurements at Position B.

A review of the traffic noise profile over the 24-hour period (chart 1) shows that noise levels taken over the period 12:00 to 15:00 are representative of the daytime $L_{Aeq,12\text{-hour}}$ level. Using the daytime / evening / night time relationship for the 24-hour period, the noise levels at Position B, to the nearest dB, may be extrapolated as follows:

Daytime $L_{Aeq,12\text{ hour}}$	71dB
Evening $L_{Aeq,4\text{ hour}}$	69dB
Night time $L_{Aeq,8\text{ hour}}$	65dB

Table 3 provides a review of the ambient sound levels against the assessment category at each position.

Period		Position A			Position B		
		$L_{Aeq,T}$	$L_{Aeq,T}$ to nearest 5dB	Category	$L_{Aeq,T}$	$L_{Aeq,T}$ to nearest 5dB	Category
Day	07:00-19:00	66	65	B	71	70	C
Evening	19:00 – 23:00	64	65	C	69	70	C
Night	23:00 – 07:00	60	60	C	65	65	C

Table 3: Ambient noise levels with assessment category.

The threshold values for potential significant effect at dwellings, for construction operations during normal daytime hours are summarised in Table 4.

Façade position (see figure 1 to identify dwelling elevation)	Category	Threshold Value Daytime $L_{Aeq,T}$ dB
Position A: representative of: Rear (north) and side (east) elevations of Eastgate Apartments	B	70
Position B: representative of: Front (north) elevations of dwellings located on south side of A6104 Front (south) elevation of Eastgate Apartments on north side of A6104	C	75

Table 4: Assessment category and threshold value at dwellings.

Whilst no construction works are expected to take place during evening or night time hours, all dwellings are in Category C for these periods, so the threshold values of $L_{Aeq,T}$ 65dB evening and 55dB night-time would apply.

As per Note 3 of Table E1 of the ABC method, threshold values for potential significant effect apply at dwellings. Should the threshold values indicated in Table 4 be used to apply noise limits, these noise limits would therefore be applicable and if necessary monitored, at the dwelling facades and not the construction site boundary.

The note from the planning officer suggests a noise limit should be applied to the construction site boundary. However, only the west boundary of the Aldi development site shares a boundary with the east boundary of the Eastgate apartments. Consequently, the threshold values (or noise limits) may be applied at this boundary.

Other dwelling boundaries, particularly of the properties situated along the north side of the A6104, Victoria Avenue East, are not shared with the Aldi construction site boundary (they are on the opposite side of this wide road) and consequently any noise limit for the south boundary would need to be adjusted (increased) to account for noise propagation over the additional distance between the site boundary and the boundary with houses.

This adjustment or correction would depend on the relative distance between the main noise activity on the construction site to the site boundary and to the house position, so making this complicated to apply. Observing the noise limits derived from the threshold values at the position of the dwellings would therefore be more appropriate.

4. VERIFICATION OF COMPLIANCE WITH NOISE LIMITS.

Existing ambient $L_{Aeq,T}$ sound levels, together with L_{Amax} noise levels, are at a high level in the locality around the Aldi construction site, due to traffic noise, so residents of the closest dwellings to the Aldi development site are likely to be tolerant of noise and therefore complaint regarding additional daytime noise from construction activity unlikely.

It is therefore proposed that noise monitoring, (for the purpose of verifying compliance with the noise limits derived in this report), for the site will need to be continually monitored to ensure the site noise levels do not exceed the agreed limits, not just if complaints are received.

Where the noise levels exceed the limit, the site manager would need to be alerted and work should cease until the cause of the exceedance has been identified and / or an alternative less intrusive methods of work are adopted.