

Technical Note

Project: The Co-operative, Lord Street, Wrexham
Subject: Addendum to Noise Impact Assessment
Date: 19th October 2020
Ref: 89261/TN01

To: Jacqui Kenyon
From: Nigel Chandler
cc:

Dear Jacqui,

Further to the receipt of correspondence from Wrexham Borough Council (from Ian Jones to David Williams, ref P/2020/0435 dated 8 September 2020) we have reviewed our noise impact assessment report 89261/NIA dated 21st May 2020.

It should be noted that since the compilation of our report, the air conditioning units proposed have been changed. The comments, calculations and noise levels referred to below are based on the units now proposed (two Daikin RZASG140MY1 rather than two Mitsubishi PHUZ-ZRP140YKA2 as shown in the report).

Noise survey

It is correct that no noise survey has been undertaken at the site. When we were commissioned, in May 2020, Government advice was to avoid non-essential travel, and this is likely to have resulted in lower background sound levels than would normally be the case. Wrexham is currently undergoing a new lockdown, in place since 1st October. We therefore do not believe that a noise survey would be representative of the more-normal noise environment and have therefore made our assessments against other standards and guidance.

Nearest noise-sensitive receptors

The correspondence from WCBC states that:

WCBC Planning Dept. have advised of the following residential properties or granted planning permissions for residential developments:
Above 6 Lord Street [it is believed this is part of the Trinity House development described below]
P/2018/0267 - 16 to 30 King Street
P/2018/0267 - Trinity House, Trinity Street

16-30 King Street is to the west of the store, and Trinity House is to the east. These were not considered within our report, though they are at a significantly greater distance than the windows assessed within our report and, in the case of King Street, are also screened from the plant by the building housing the new store.

There are no existing or proposed residential properties above the new store. The previous ground floor units were occupied by a bookmaker and a restaurant, and the new store is not likely to produce significantly increased internal noise levels compared with those uses. It is therefore reasonable to assume that the airborne sound insulation between the store and the offices above is suitable for the respective uses.

Predicted plant noise levels

Noise levels have been predicted at the windows of the property on the first floor above the store and at the nearest windows of Trinity House / 6 Lord Street. The calculations are shown in Appendix A.

The results show that rating noise levels at Trinity House due to the proposed plant are 26dB during the daytime and 25 dB at night. The local authority's usual requirement is that the rating level due to plant should be no higher than the existing background sound level. The proposed plant would therefore meet this criterion as long as the representative background sound levels are at least 26dB L_{A90} during the daytime and 25 dB L_{A90} at night. These are very low background sound levels, only likely to be experienced in very rural areas, and it is reasonable to assume that normal environmental sound levels in this urban setting will be higher.

The predicted rating levels noted above include a 3dB acoustic feature correction; specific sound levels are 23dB(A) during the daytime and 22dB(A) at night. Based on the typical noise reduction through a partially-opened window, as described in BS 8233:2014, internal noise levels due to the proposed plant would therefore be expected to be below 10dB(A) within the nearest flats. This is objectively a very low noise level.

At the nearest commercial windows on the first floor above the store, the predicted plant sound pressure level is 36dB during both the daytime and at night. Internal sound levels, with windows partially open, are therefore expected to be approximately 21 dB(A), and therefore comfortably below BS 8233:2014 guidance, even for very noise-sensitive uses.

Please contact us if you have any questions.

Yours sincerely,

Nigel Chandler

For and behalf of Noise Solutions Ltd

Appendix A – Plant noise calculations

Receptor R1 – Commercial (1st floor above store)

Plant item	Manufacturer noise data		Distance correction		Directivity correction (dB)	Resultant at receptor, L _{Aeq} (dB)
	Noise level, L _{Aeq} (dB)	Distance (m)	Distance (m)	Correction (dB)		
ACU-1	34*	1	10	-20	0	14
ACU-2	34*	1	10	-20	0	14
HACOND	20	10	7	3	0	23
HAPACK	30	10	5	6	0	36
Cumulative sound pressure level (Daytime)						36
Cumulative sound pressure level (Night time)						36

Receptor R2 – Trinity House

Plant item	Manufacturer noise data		Distance correction		Directivity correction (dB)	BS 4142:2014 feature correction (dB)	Resultant at receptor, L _{Aeq} (dB)
	Noise level, L _{Aeq} (dB)	Distance (m)	Distance (m)	Correction (dB)			
ACU-1	34*	1	25	-28	0	+3	9
ACU-2	34*	1	25	-28	0	+3	9
HACOND	20	10	25	-8	0	+3	15
HAPACK	30	10	25	-8	0	+3	25
Cumulative sound pressure level (Daytime)							26
Cumulative sound pressure level (Night time)							25

*AC unit sound pressure level 54 dB(A) at 1m each, less 20dB(A) attenuation from the acoustic enclosures