

Technical Memorandum

To: Fozia Alharby (EAMAR Developments UK Ltd), Samantha Parkin (EAMAR Developments UK Ltd), Abdullah Alnaeem (Eamar Developments UK), Ahmed Yaseen (Crown Advisory)

From: Mike Potts (Echo Acoustics)

CC: Simon Plowman (Plan8 Town Planning)

Date: 12 May 2021

Re: San Court, 25-33 Wilmslow Road, Manchester, M14 5TB: determination of internal noise in bedrooms, with respect to requirements of Condition 5 of planning consent 111739/FO/2016/S1, following fitting of secondary glazing.

This document supplements the previous assessment reports prepared by Echo Acoustics¹ & ². It presents the results of a further measurement survey and investigation of the glazing in bedrooms of the residential apartments, specifically those with windows on the western façade overlooking the A34 Wilmslow Road.

Compliance with Condition 5 of the planning permission for the building, granted by Manchester City Council on 28 April 2016 (planning reference: 111739/FO/2016/S1), remains outstanding, principally as a result of an exceedance of the maximum (dB L_{Amax}) noise levels in bedrooms facing Wilmslow Road.

Condition 5 states:

“Before the development commences a scheme for acoustically insulating the proposed residential accommodation against noise from Wilmslow Road and other sources of noise on or near the site, shall be submitted to and approved in writing by the City Council as local planning authority. The approved noise insulation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data must include measurements taken during a rush-hour period and night time to determine the appropriate sound insulation measures necessary. The internal noise criteria are as follows:

Bedrooms (night time - 23.00 - 07.00) 30 dB LAeq (individual noise events shall not normally exceed 45 dB LAmax,F by more than 15 times)

Living Rooms (daytime - 07.00 - 23.00) 35 dB LAeq

Gardens and terraces (daytime) 55 dB LAeq

¹ Echo Acoustics “2021-03-26 San Court_Review of glazing ventilation & plant_Tech Memo_Issued”

² Echo Acoustics “2021-01-22 San Court_Review of glazing and ventilation_Tech Memo_Issued”

Additionally, where entertainment noise is a factor in the noise climate the sound insulation scheme shall be designed to achieve internal noise levels in the 63Hz and 125Hz octave centre frequency bands so as not to exceed (in habitable rooms) 47dB and 41dB, respectively.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance, pursuant to Policies DM1 in the Core Strategy Development Plan Document and saved UDP Policy DC26”.

The previous assessment report concluded that:

- “• External and internal noise levels, in living rooms, (are) in compliance with the requirements of planning condition 5.*
- Night time ambient (L_{Aeq}) noise levels in bedrooms (are) in compliance with the requirements of planning condition 5.*
- Night time maximum (L_{Amax}) noise levels in bedrooms (are) up to 15 dB greater than the level specified in planning condition 5. The assessment recommends the fitting of secondary (single) glazing on the inside of the window, with a minimum spacing of 150mm from the double glazed window units. The secondary glazing must be capable of being opened and allow access to the double glazed window. The reveal between the two sets of glazing must be lined with an acoustically absorbent material”.*

Secondary glazing has now been installed on one window in the same apartment in which previous sound tests were conducted and further measurements were undertaken, on Monday 10 May 2021, to determine the performance of the secondary glazing.

The survey utilised two meters: a Casella CEL 633C Class 1 integrating, averaging sound level meter located inside the bedroom, approximately 1 metre from the window; a Bruell & Kjaer 2250 Class 1 integrating, averaging sound level meter installed externally on the balcony overlooking Wilmslow Road.

The meters’ internal clocks were synchronised to ensure results were comparable and the meters were field-calibrated before and after the survey; no significant variation in calibration tone was observed.

The external meter was set to record three concurrent, consecutive 15-minute measurements of the ambient (L_{Aeq}) and maximum (L_{Amax}) noise levels; the internal meter was set to record 5-minute and 1-second data during the same period, to enable more detailed post-measurement analysis.

The weather at the time of the survey was highly variable with rain before the survey and a brief but heavy down-pour shortly after the commencement of the survey. No rain fell after this and the sun came out, rapidly starting to dry the roads. There was negligible wind during the survey and the ambient temperature was 10 Celsius.

Traffic using Wilmslow Road during the survey was moderately heavy and included a full range of vehicles from motorcycles to heavy goods vehicles; the sound of vehicles horns also occurred during the survey.

The assessment assumes that day and night time noise levels are not dis-similar, due to the 24-hour economy occurring along this section of road.

The data from the survey on 10 May 2021 are presented in Table 1 and Figures 1 and 2.

Table 1: Measurement survey data 10 May 2021

Time	Ambient (dB L _{Aeq})		Difference (dB R _w)	dB L _{Amax}
	External	Internal		
14.15	68.1	24.8	43.3	42.0
14.30	67.1	22.6	44.5	39.7
14.45	66.7	22.9	43.8	41.2
Ave:	67.3	23.6	43.9	-

Figure 1: Ambient (L_{Aeq}) 1-second measurement data in bedroom

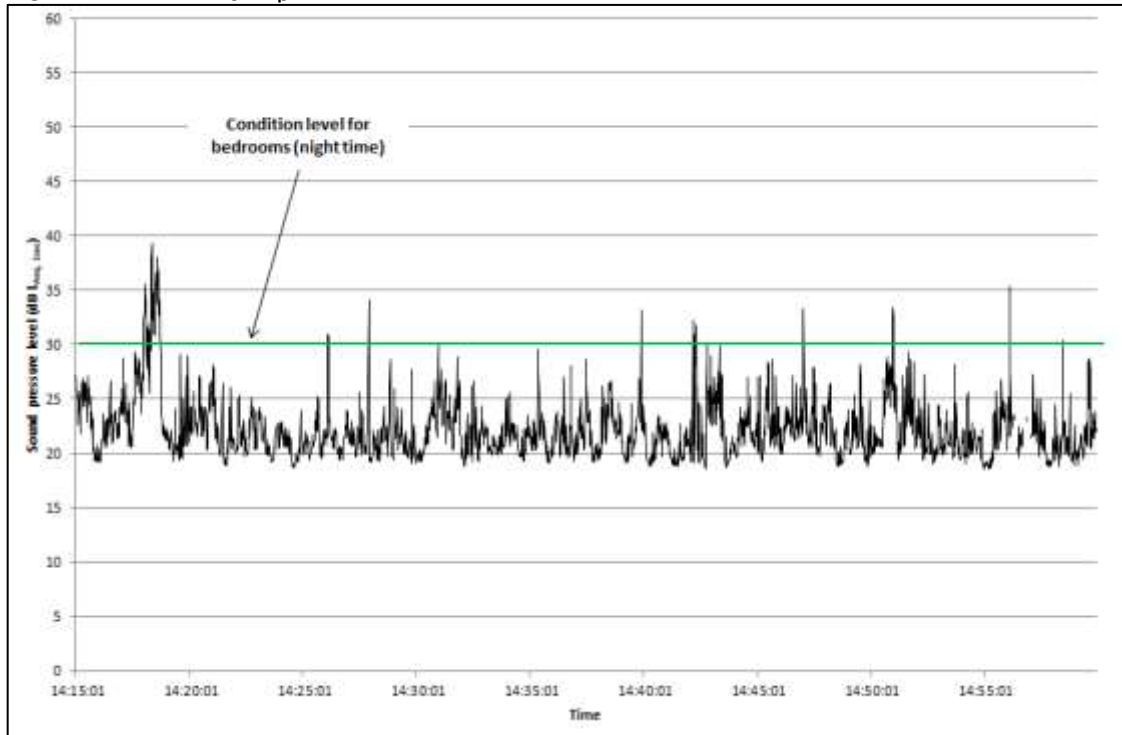
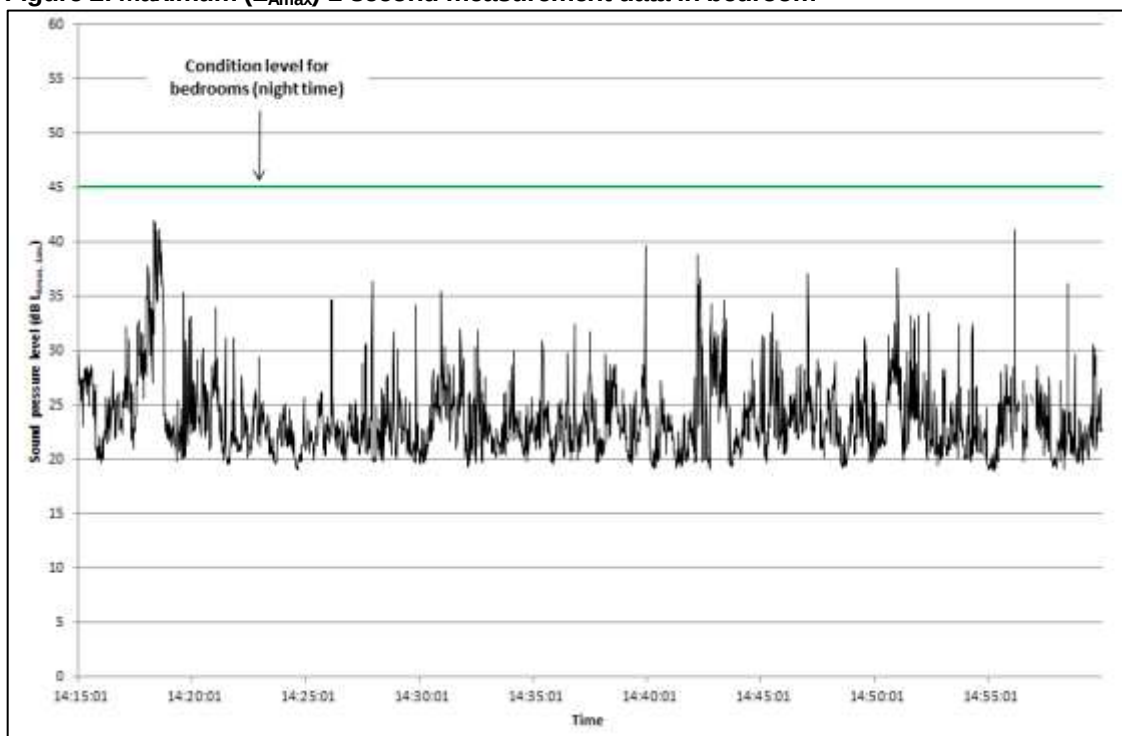


Figure 2: Maximum (L_{Amax}) 1-second measurement data in bedroom



It is worth noting that although a number of occasional individual events exceed the 30 dB L_{Aeq} level, the effect of averaging over a 15-minute time (or 45-minute) period result in a level significantly below 30 dB L_{Aeq} as indicated by the data in Table 1; the conditioned ambient (L_{Aeq}) noise level, with respect to the night time period, is based on a single-figure 8-hour time-averaged noise level.

The data clearly indicate that time-averaged ambient and maximum noise levels are below the levels required by Condition 5 of the planning permission.

Conclusion

The assessment demonstrates that the provision of secondary glazing, in bedrooms overlooking Wilmslow Road, provides:

1. Sound attenuation in the region of 45 dB R_W ;
2. Suitable conditions for sleep;
3. Compliance with Condition 5 of the planning permission for the building (reference: 111739/FO/2016/S1).