



Ref: P4380/L03/RDC

03 May 2023

To:	John O'Hare	of:	The Egerton (Property) Partnership Ltd
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Dear John,

23a Crimsworth Avenue, Levenshulme – Verification Measurements

1.0 Introduction

Verification noise measurements were undertaken within a number of habitable rooms at 23a Crimsworth Avenue on Thursday 27 April 2023. The results of the testing and our comments are presented in this technical note.

The measurements were required to provide evidence of compliance with Planning Condition B placed on the scheme by Manchester City Council (MCC), which states the following:

"b) Prior to first occupation of the residential units, a verification report will be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant's report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria."

A noise assessment for the development was prepared in August 2021, AEC ref: P4380/R1/RDC.

AEC has been informed that glazing with a build-up of 6.4mm laminated glass / 18mm cavity / 4mm glass, has been installed on-site which should achieve approximately 32dBR_w. Ventilation has been provided to all of the rooms via a positive input ventilation (PIV) system. Therefore, neither openable windows or trickle vents are relied upon for whole dwelling (background) ventilation.

2.0 Measured Noise Levels

Simultaneous noise level measurements were undertaken both externally and within the ground floor living/kitchen, first floor bedroom and second floor bedroom of the property.

An extension lead and an adjustable pole were used to measure noise levels outside the upper floor windows.

All measurements were carried out in general accordance with BS EN ISO 16283-3:2016 'Acoustics – Field measurement of sound insulation in buildings and of building elements. Part 3: Façade Sound Insulation'.

Based on the latest timetables, there are 240 trams that pass by the property during the 16-hour daytime period (0700 to 2300h). There are approximately 30 tram movements during the 8-hour night-time period (2300 to 0700h). Based on appropriate calculations, there is an approximate drop in ambient noise levels of -6dB from daytime to night-time.

The resultant external daytime and night-time ambient noise levels, based on the measured external noise levels and the -6dB difference highlighted above, is presented in Table 1, below.

Using the simultaneous external and internal noise measurements, the level difference (D) of the external envelope, including the glazing, has been determined and is presented in Table 1, below.

Based on the above, the resultant internal noise level has been calculated and is also presented in Table 1.

Table 1 – Measured Resultant Level Difference & Calculated Internal Noise Levels

Room	Road Traffic Noise, dB(A)				Criterion Met?
	Ambient Noise Level, $L_{Aeq,T}$	Measured On-site Level Difference (D)	Resultant Internal Noise Level $L_{Aeq,T}$	Internal Target Criteria $L_{Aeq,T}$	
Ground Floor Living / Kitchen	61	32	29	≤ 35	✓
1 st Floor Bedroom	66	38	28	≤ 30	✓
2 nd Floor Bedroom	64	32	32	≤ 30	✓*

*See comment below.

Based on the above results, the internal ambient noise level requirements have been met in all rooms. A +2dB exceedance is considered negligible in terms of acoustics and should, therefore, deemed to be acceptable.

In relation to maximum noise levels in bedrooms, during the verification measurements, 14 trains were measured externally to bedrooms and maximum noise levels ranged from 84 – 90dB $L_{Amax,F}$ with the average (and modal) being 86dB $L_{Amax,F}$.

Based on this average figure and the measured level differences to the 2nd floor bedroom (32dB) and 1st floor bedroom (38dB), maximum noise levels should not typically exceed 54dB $L_{Amax,F}$ and 48dB $L_{Amax,F}$, in the 2nd floor and 1st floor bedrooms, respectively.

As train noise is the source of the maximum noise level events, the above results could be deemed acceptable. Should a further reduction be required in the 2nd floor bedroom, AEC has seen marginal (1-2dB) reductions found in internal noise levels as a result of very heavy curtains and/or wooden shutters being installed.

I trust the above is clear and of assistance at this stage, however, if you have any queries please give me a call.

Yours sincerely



Ross Chamberlain

Checked by: 