

12th March 2021

Dear Ian,

Mauldeth Road, Manchester – acoustic validation and compliance report

This document presents the summary of the requested noise and vibration monitoring undertaken at the newly constructed dwellings, to verify compliance with the indoors noise and vibration criteria and discharge Manchester City Council approved planning condition.

The noise survey was carried out over 24 hours at two positions between February 27th and 28th 2021. One sound level meter was at the first floor in a bedroom overlooking to the railway track and the second also at the first floor overlooking to Mauldeth Road.

The vibration survey was carried out on 27th February between 09:00 and 10:00 am

Figure 1 shows the approx. noise and vibration monitoring locations.

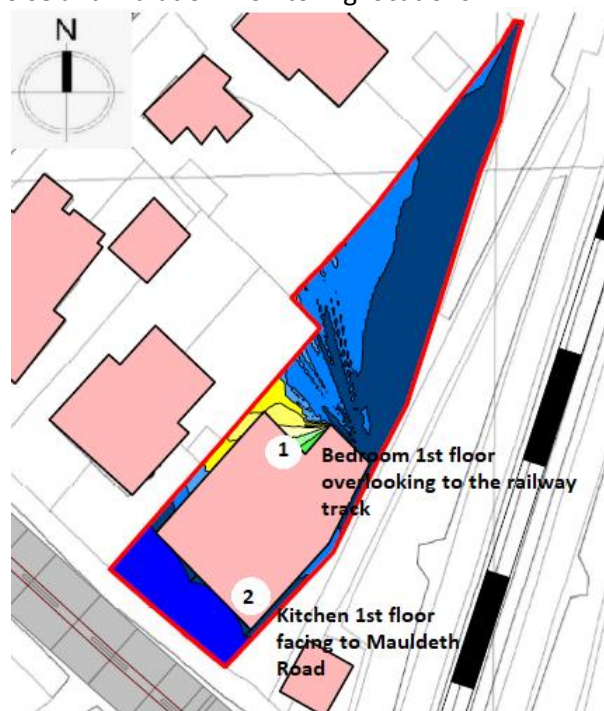


Figure 1 – surveys approx. location

Table 1 shows the indoors ambient background surveys summary of results.

Table 1 – summary of noise survey monitoring

Survey location	Daytime (07:00 – 23:00)	Night-time (23:00 - 07:00)
NMP1 - bedroom	L _{Aeq,16hrs} 24.4 dB	L _{Aeq,8hrs} 18.2 dB
		L _{Amax} 44.6 dB
NMP2 – living area	L _{Aeq,16hrs} 34.2 dB	L _{Aeq,8hrs} 26.9 dB

The results shown in Table 1 indicates compliance with the set precautionary indoor sound levels, i.e., below L_{Aeq,16hr} 35dB during daytime within living areas and L_{Aeq,8hrs} 30dB and L_{Amax}, 45dB during night-time within bedrooms.

Figure 2 shows the estimated vibration dose value result summary. The calculation is based on the on-site monitoring and published train movements timetable. Please note that calculations are based on the published temporary timetable and that once the pandemic reaction stops and life resume to normality, the results may differ slightly. Based on the publish temporary timetable there are circa 75 passenger train movements during daytime and circa 6 movements during the night-time.

Also, to estimate the likely worst-case scenario, it was assumed that freight trains would use the railway track at least five time during the daytime and two during the night.

Train Type	Anticipated Number of Movements		Predicted Vibration Dose Value (m/s ^{1.75})	
	Daytime	Night-time	Daytime	Night-time
	(07:00 to 23:00)	(23:00 to 07:00)	(07:00 to 23:00)	(23:00 to 07:00)
Passenger	75	6	0.011	0.006
Freight	5	2	0.134	0.107
Total VDV			0.134	0.006

Figure 2 – estimated VDV daytime and night-time

The calculated VDV for passenger and freight trains have been add to evaluate the likelihood for adverse impact and Figure 3 shows the total calculated levels compared to the adverse comments threshold.

Period	Estimated total VDV	Unlikely probability of adverse	Low probability of adverse comment	Adverse comment possible	Adverse comment probable
16h day	0.134	0 - 0.2	0.2-0.4	0.4-0.8	0.8-1.6
8h Night	0.006	0 - 0.13	0.13	0.26	0.51

Figure 3 – comparison with the vibration probability of adverse impact

The estimated vibration levels recorded in the first floor of the bedroom overlooking to the railway track indicates that vibration due to train movements are below the “low probability of adverse comment” and therefore unlikely to generate adverse impact.

Therefore, according to the survey results presented above, the indoor noise and vibration levels are indicative of compliance with the set precautionary criteria.

We trust the necessary validation and compliance with the set noise and vibration parameters have been satisfactorily provided in this letter, however, please do contact Ensafe for further information or clarification if necessary.

Yours faithfully



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