

Technical Note

Project:	Union T2, St John's, Manchester
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INTRODUCTION

This Technical Note summarises the results of a new noise survey at Union T2, Water Street that has been carried out to assist in the discharge of planning condition 16a attached to Planning Permission reference 132952/JO/2022.

Planning condition 16a states that:

“Before the development commences, other than enabling works comprising piling and construction of the sub structure commences, a scheme for acoustically insulating the proposed co-living accommodation against noise from the nearby road network shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises. The approved noise insulation scheme shall be completed before any of the co-living 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 L_{Amax,F} by more than 15 times)*
- *Living Rooms (daytime - 07.00 - 23.00) 35 dB LAeq*
- *Gardens and terraces (daytime) 55 dB LAeq*

“Due to the proximity of the development to the Ordsall Chord it will be necessary for vibration criteria to apply which can be found in BS 6472: 2008 "Guide to evaluation of human exposure to vibration in buildings". Groundborne noise/re-radiated noise should also be factored into the assessment and design.

“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.”

At the time of the planning submission for Union T2, large-scale construction works were ongoing in the area and thus it was not possible to carry out the normal extent of noise surveys to determine the prevailing environmental noise levels in the area. The environmental noise report for the proposed development therefore referenced historical noise survey data along with a targeted noise survey.

Manchester City Council has advised that in order to discharge planning condition 16a, they require a new noise survey to be carried out to 'support archive measurement data used'.

Fisher Acoustics Ltd has therefore carried out a noise survey at the Union T2 site. The survey was carried out between Friday 26 April 2024 and Tuesday 30 April 2024.

The co-living accommodation is located on levels 5 to 35 of the building. The measurement microphone for the noise survey was positioned 1 metre external to the south east façade at level 7 of T2, with a direct line of sight to both Water Street and the nearby Factory International venue.

Figure 1 identifies the measurement location in plan.

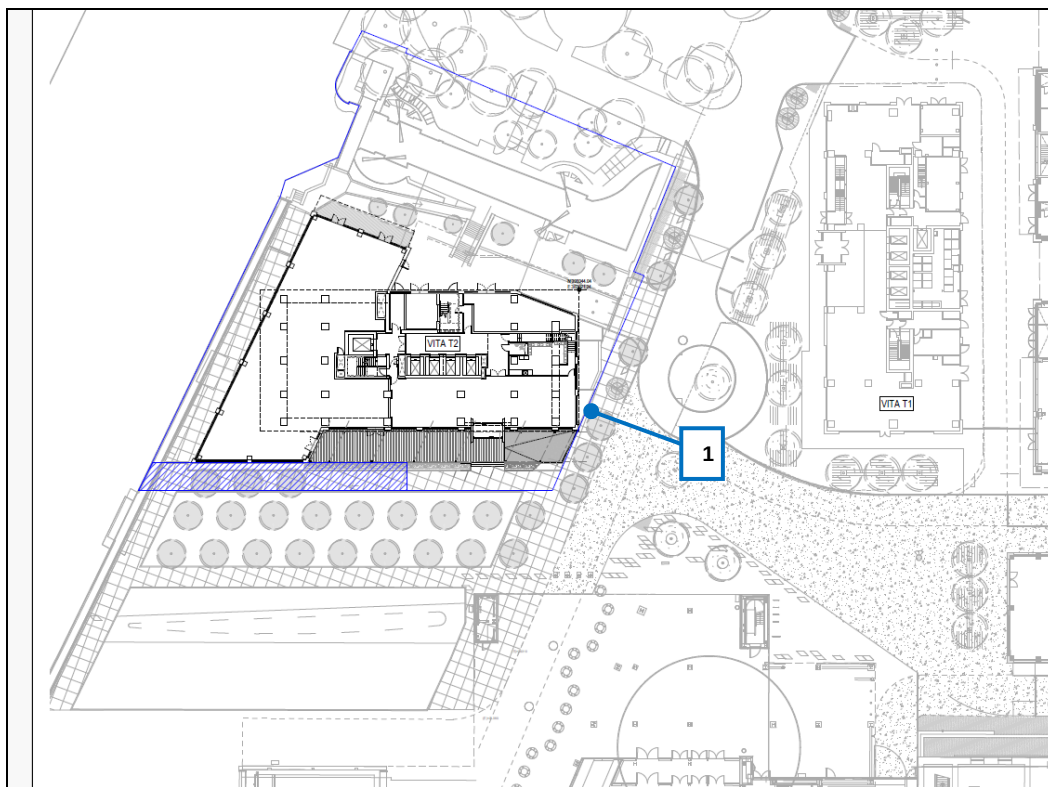


Figure 1: Noise survey measurement location

Construction works are currently ongoing at T2 and thus the reported noise levels exclude the times that the construction site was operational

Over the course of the noise survey, there were events staged at Factory International as follows:

1. 26 April 2024, evening; The Hall: Paraorchestra with Brett Anderson, Charles Hazlewood & Gwenno (live music)
2. 27 April 2024, evening; The Hall: David Hoyle (variety show, including live music)

The noise levels measured at the site during the day and night are summarised in Table 1.

Day	Measured Noise Level (free-field)			
	Daytime (defined as 0700 to 2300)		Night time (defined as 2300 to 0700)	
	dB, L _{Aeq}	dB, L _{Amax}	dB, L _{Aeq}	dB, L _{Amax}
Friday 26 April 2024	55	62 to 83	52	48 to 79
Saturday 27 April 2024	54	53 to 77	51	48 to 76
Sunday 28 April 2024	54	53 to 84	52	49 to 73
Monday 29 April 2024	58	56 to 86	53	56 to 87
Tuesday 30 April 2024	56	57 to 72	-	-

Table 1: Summary of measured environmental noise levels

The weather during the survey was suitable for environmental noise measurements with the exception of Monday 29 April, during which there were periods of elevated wind speeds.

The external noise levels assumed for the determination of the sound insulation performance of the façade to the co-living accommodation are identified in Table 2. At the time of the assessment, it was not confirmed that Water Street would be closed to through-traffic. The assumed traffic noise levels are therefore relatively high.

Table 2 also identifies the daytime and night time noise levels measured during the noise survey conducted in April 2024.

Noise source	Time of day	Noise Level, dB L _{Aeq}	Sound Pressure Level (dB) @ Octave Band Centre Frequency (Hz)						
			63	125	250	500	1k	2k	4k
Traffic noise	Day/Night	63	70	65	62	59	59	55	49
Pedestrian noise	Day/Night	64	49	50	59	66	66	58	51
All prevailing noise sources during noise survey 26 Apr to 30 Apr	Daytime	55	57	52	53	50	52	47	41
	Night time	52	54	51	52	47	49	44	39

Table 2: Octave Band L_{eq} Noise Levels

Conclusion

The noise levels used to determine the sound insulation performance of the façade to the co-living accommodation at Union T2 are higher than those measured during the recent noise survey. This can be expected given that Water Street is now closed to through-traffic.

The measured external noise levels at the Union T2 site are such that compliance with the internal noise criteria identified in condition 16A of the planning approval are expected to be readily achieved given the specified sound insulation performance of the installed façade elements.