

Technical Note

Project:	Union T1, St John's, Manchester
Document Reference:	T02B-PR0625-MPF
Date:	27/03/2024
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Subject:	Planning Condition 11

INTRODUCTION

This technical note has been prepared by Fisher Acoustics to address the requirements of Condition 11 attached to Planning Permission Reference 125655/FO/2019 for a Co-Living Development at Land at Water Street, St John's, Manchester.

Planning Condition 11 attached to the consent for the building, Union T1, requires that:

- *No amplified sound or any music shall be produced or played in any external areas of the site, other than in accordance with a scheme detailing the levels at which any music shall be played and the hours during which it shall be played which has been submitted to and approved in writing by the City Council as local planning authority.*

Reason - In interests of residential amenity in order to reduce noise and general disturbance in accordance with saved policy DC26.1 of the Unitary Development Plan for the City of Manchester and policies SP1 and DM1 of the Core Strategy.

POTENTIAL AMPLIFIED SOUND SOURCES

There are no current proposals to replay amplified sound or music external to the building. However, there are two commercial units on the ground floor of the building that have access to external space. There is therefore the possibility that a tenant may wish to employ external music as part of their operation. Any such music replay must comply with appropriate music noise limits.

APPLICABLE NOISE CRITERIA

'Planning & Noise, Technical Guidance', dated October 2022 has been issued by the Environmental Protection, Environmental Health and The Neighbourhoods Service sections of Manchester City Council. The document provides guidance to applicants and consultants concerning the assessment and prediction of environmental noise associated with a particular development. Reference is also made in the document to the relevant supporting information and guidance documents that developers are expected to refer to when submitting a planning application.

With regard to the potential noise impact on a residential development from an entertainment venue, Section 3.7.1.2 'Entertainment Venues' of 'Planning & Noise, Technical Guidance' states

- 'When considering the potential impact of a proposal for an entertainment venue, consultants should consider the overall noise level (LAeq) and the 63 Hz and 125 Hz octave band noise levels (Leq). Music noise in the 63 Hz and 125 Hz octave bands, which is often described as "bass noise", is particularly difficult to contain and the impulsive character of this low frequency music noise is particularly disturbing for local residents exposed to it.
- A planning application for a new entertainment venue that is structurally detached from other building uses should demonstrate that music noise from the proposal will not be 'audible' in nearby residential properties, assuming that the residential properties in question have their windows open. The criterion here is:

Entertainment noise (LAeq) should be controlled to 5dB below the background noise level (LA90) without the entertainment noise present, in each octave band at the nearest noise sensitive location.
- A criterion that would achieve a condition of 'inaudible' / 'virtually inaudible' which is applicable for new residential developments that are structurally connected to entertainment venues (or vice versa) would be: 'Music noise levels in the 63Hz and 125Hz octave centre frequency bands (Leq) should be controlled so as not to exceed (in habitable rooms) 47dB and 41dB (Leq), respectively.
- This criterion may also be applicable for new residential developments that are structurally separate from an existing entertainment venue'.

With reference to the results of noise surveys conducted for planning applications 126648/FO/2020 and 121721/FO/2018, Table 1 identifies the measured minimum pre-existing background noise levels at the noise-sensitive receptors.

Location/period	Sound Pressure Level (dB L90)						
	@ Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Slate Yard (0700 to 2300)	53	52	52	50	50	45	34
Slate Yard (2300 to 0700) (estimated)	49	46	44	39	39	34	24
Left Bank (0700 to 2300)	58	55	54	52	50	43	33
Left Bank (2300 to 0700)	52	46	47	44	42	36	26
Marriott Hotel (0700 to 2300)	51	50	48	45	41	34	27
Marriott Hotel (2300 to 0700)	50	50	48	45	41	34	31
Union T1 (0700 to 2300)	52	49	48	43	47	41	27
Union T1 (2300 to 0700)	49	46	44	39	39	34	24

Table 1: Minimum measured background noise levels at noise-sensitive receptors

The noise & vibration chapter of the Environmental Statement for Union T1 identified the maximum allowable external noise levels at the closest residential facades due to music noise egress from the proposed commercial units in order to comply with the requirements of Manchester City Council at the time of the application. Since the application, Manchester City Council has relaxed the external noise criterion by 5dB.

The applicable noise limits to comply with the revised requirement of Manchester City Council are presented in Table 2.

Location/period	Sound Pressure Level (dB Leq)						
	@ Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Slate Yard (0700 to 2300)	48	41	40	35	39	33	20
Slate Yard (2300 to 0700)	48	38	36	31	28	26	20
Left Bank (0700 to 2300)	50	47	46	44	42	35	25
Left Bank (2300 to 0700)	48	42	41	39	37	30	20
Marriott Hotel (0700 to 2300)	48	45	43	40	37	40	31
Marriott Hotel (2300 to 0700)	48	45	43	40	36	39	32
Union T1 (0700 to 2300)	48	41	40	35	39	33	20
Union T1 (2300 to 0700)	48	38	36	31	28	26	20

Table 2: Maximum allowable external music noise levels due to commercial units

It should be noted that in some instances, the identified allowable noise level is not 5dB below the pre-existing minimum background noise level. This follows from the requirement of Manchester City Council that the allowable entertainment noise is based on the typical background noise level, rather than the minimum background noise level. In addition, lower noise levels than those identified in Table 2 are not considered to be necessary to achieve appropriate noise levels within the buildings in question, given Manchester City Council's guidance on internal music noise levels.

MAXIMUM RECOMMENDED SOUND LEVEL FROM LOUDSPEAKERS

In the absence of any current proposal for external loudspeakers, it has been assumed that loudspeakers are located in relatively close proximity to the closest residential façades, namely those of Union T1 itself. The closest residential apartments are located at Level 2 of the building. Figure 1 identifies the assumed location of external loudspeakers.

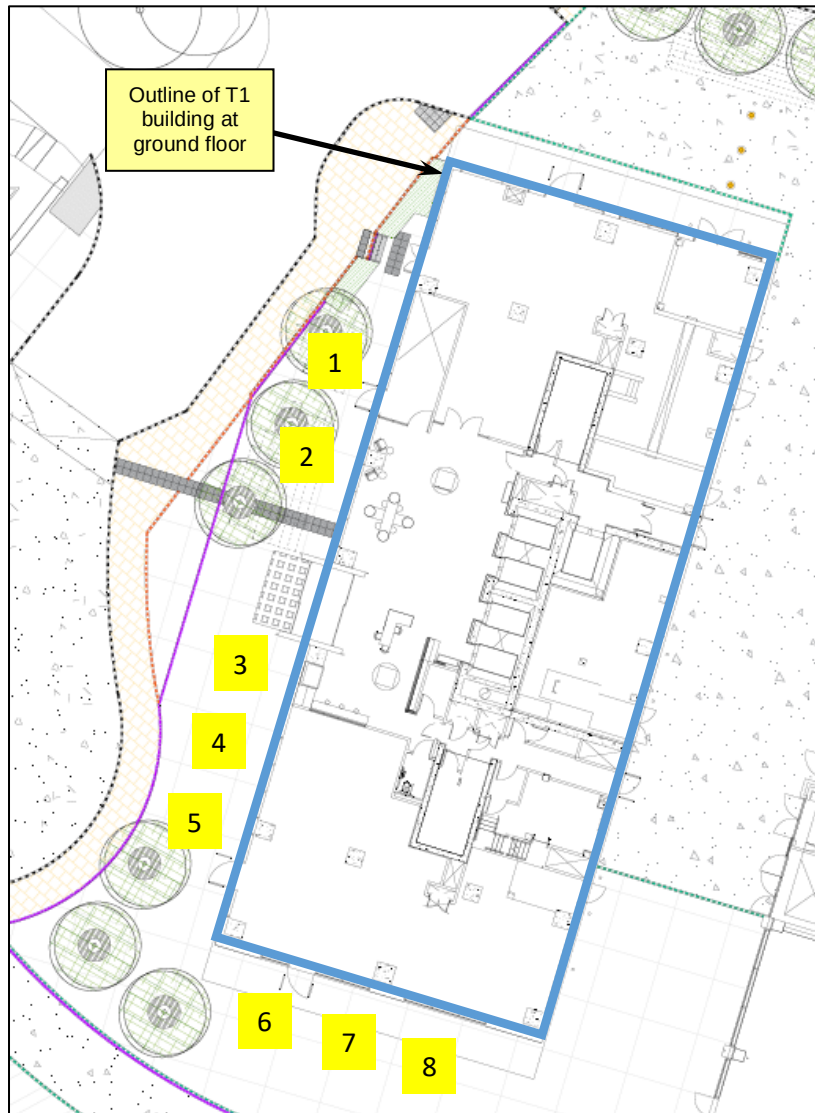


Figure 1: T1 building, external areas and potential loudspeaker locations

Calculations have been carried out to determine the maximum allowable sound pressure levels at 1 metre from each loudspeaker such that the maximum allowable daytime external noise level at the nearest residential properties, as detailed in Table 2, are not exceeded. The calculations assume that at each location identified in Figure 1 there is one loudspeaker and that all loudspeakers at each location operate simultaneously.

Table 3 identifies the calculated maximum allowable sound pressure levels at 1 metre from each external loudspeaker to comply with the noise limits in Table 1.

Loudspeaker Location (see Figure 1)	Sound Pressure Level (dB Leq), 1 metre @ Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
1	64	57	56	51	55	49	36
2	64	57	56	51	55	49	36
3	64	57	56	51	55	49	36
4	64	57	56	51	55	49	36
5	64	57	56	51	55	49	36
6	64	57	56	51	55	49	36
7	64	57	56	51	55	49	36
8	64	57	56	51	55	49	36

Table 3: Maximum allowable noise levels at individual loudspeakers – daytime

The permissible sound pressure levels are of necessity very low but are compatible with the replay of low-level background music in an external seating area. It is therefore considered that external loudspeakers can be accommodated within the scheme.