

Technical Note

Project:	Circle Square, Manchester
Document Reference:	T01-PR0538-MPF
Date:	24/05/2023
Author:	Matt Fisher
Subject:	Remodelling of amenity spaces

INTRODUCTION

The proposed remodelling of amenity spaces at Circle Square includes proposals to incorporate existing commercial space into the amenity spaces for the use of residents.

In particular, the following is proposed:

1. Change of use of unit T5 from commercial space to work spaces for the sole use of residents. Unit T5 is located on the Mezzanine level of Building 5&6.
2. Change of use of part of unit T1 from commercial space to residents' Gym studio. Unit T1 is located on the Mezzanine level of Building 5&6.

CIRCLE SQUARE PLANNING APPROVAL

The planning approval for Circle Square (planning reference 116450/FO/2017 as amended by 126191/NMC/2020) included condition 24 in relation to noise from the commercial units, as follows:

- The commercial units shall be acoustically insulated in accordance with the Recommendations in Deloitte, Noise Impact, Phase 1B Circle Square dated January 2016 by Fisher Acoustics and the specifications in relation to structure borne noise as set out in Fisher Acoustics letter dated 6th April 2016 with the implementation of these approved works to be confirmed within a Verification Report to be submitted to and approved in writing by the City Council as Local Planning Author

Activity Noise Egress

The 'Noise Impact' document referred to in condition 24 is the Noise and Vibration chapter of the Environmental Statement submitted as part of the planning application for Circle Square. This document included the recommended noise limits within the retail units and gym areas proposed at the time of submission.

These internal noise limits are based on the achievement of a music noise level (measured as an Leq noise level) external to a residential property due to the commercial units and gym that is 10dB lower than the prevailing external background noise level in each octave band. This criterion is 5dB more onerous than Manchester City Councils' requirement at the time of writing. (Manchester City Council relaxed their external noise guidance for music noise breakout by 5dB in 2022).

Table 1 identifies the recommended maximum internal noise levels within the commercial units and gym of Building 5&6 as detailed in the Noise and Vibration chapter of the Environmental Statement, as governed by noise egress via the building façade.

Space	Spatially averaged sound pressure level (dB Leq) @ Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Retail units, Charles St elevation Daytime (up to 2300)	89	91	88	94	93	90	94
Retail units, courtyard elevation Daytime (up to 2300)	84	86	85	87	87	83	85
Gym Daytime (up to 2300)	89	91	88	94	93	90	94
Retail units, Charles St elevation Night time (2300 to 0700)	86	89	86	92	93	86	88
Retail units, courtyard elevation Night time (2300 to 0700)	77	80	76	82	83	76	78
Gym Night time (2300 to 0700)	86	89	86	92	93	86	88

Table 1: Maximum allowable daytime and night time internal noise levels within units, doors closed

The potential activity noise levels within the proposed work spaces for residents are broadly 20 dB to 30 dB lower than the allowable noise levels identified in Table 1. Therefore, compliance with the requirements of the condition 24 is fully expected given the proposed change of use of the commercial unit.

Internal Noise Transfer

As referenced in condition 24, Fisher Acoustics letter dated 6th April 2016 gives the recommended performance sound insulation performance of party floors between amenity spaces and residential apartments and the associated outline build specification of ceilings to amenity spaces below residential apartments.

With regard to a party floor between a gym studio and an apartment, a sound insulation performance of 68 dB DnT,w is recommended by the letter referenced by the planning condition. The party floor between the existing gym studio and the apartment above achieves a performance on site of at least 68dB DnT,w and therefore complies with the requirements of the planning condition 24. As the proposed new gym studio is to be provided with the same ceiling build-up as the existing gym studio, full compliance with the requirements of condition 24 is expected.

With regard to a party floor between a commercial unit and apartment, the letter referenced by the planning condition identifies the maximum recommended activity noise level in a commercial where the party floor achieves a sound insulation performance of 58 dB DnT,w.

Table 2 identifies the applicable noise levels.

Room	Sound Pressure Level (dB) @ Octave Band Centre Frequency (Hz)						
	63	125	250	500	1k	2k	4k
Commercial Units	76	70	67	71	77	80	80

Table 2: Maximum recommended sound levels in rooms

The potential activity noise levels within the proposed workspace are less than those identified in Table 2. Therefore the provision of a party floor between the proposed work space and apartments above that achieves a sound insulation performance of 58dB DnT,w is considered to be appropriate.

The party floor slab between the proposed work space and the apartments above achieves a performance on site of 62dB DnT,w, which improves on the requirement of the planning condition. It is therefore considered that compliance with the requirements of the planning condition 24 is achieved by the proposals.

MATT FISHER BEng(Hons) CEng MIOA
For and on behalf of Fisher Acoustics Limited