

dBx Acoustics Ltd
Beehive Mill, Jersey Street
Manchester M4 6JG
Tel 0161 408 6058
enquiries@dbxacoustics.com
www.dbxacoustics.com



September 25, 2019

Nick Leggett
Mulbury City
3 Piccadilly Place
Manchester M1 3BN

Our ref: 16031/L02

Dear Nick,

BLOSSOM STREET BLOCK B COMMERCIAL

Further to our recent correspondence, I am writing to present our assessment of noise emissions from the proposed Block B commercial unit at Blossom Street.

PROPOSALS

We understand that you are applying for A3 use, and that the unit will be fully seated with dining as well as alcohol being served. There will be no live music or performance acts and any amplified music would be for background ambience only.

The proposed hours of use are 08:00-23:30 Monday-Thursday and Sunday, and 09:00-00:30 on Friday and Saturday.

The nearest noise sensitive receptors are the apartments within Block B itself, and the Nuovo Apartments approximately 15m away. The lowest measured night-time background sound level at the Nuovo Apartments, as reported in our original noise impact assessment, is 48dB_{LA90,T}.

The commercial unit will have curtain walling along the Blossom Street façade. The glazing specification varies but is at a minimum R_w 42dB (6/16mm argon/6) double glazing with framed glazed doors.

MANCHESTER CITY COUNCIL – PLANNING & NOISE TECHNICAL GUIDANCE (DECEMBER 2015)

This document sets out Manchester City Council's requirements with regard to current guidance and policy, with the aspiration that new developments achieve the highest standards without compromising the health and wellbeing of residents. The guidance refers to the NPPF and NPSE as described below.

The following requirements are considered relevant to this assessment;

Externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a BS 4142 rating level (see below) of 5 dB L_{Aeq} below the typical background L_{A90} level at the nearest noise sensitive location.

Where entertainment noise is proposed the L_{Aeq} (entertainment noise) shall be controlled to 10 dB below the L_{A90} (without entertainment noise) in each octave band at the façade of the nearest noise sensitive location, and internal

noise levels at structurally adjoined residential properties in the 63 Hz and 125 Hz octave frequency bands shall be controlled so as not to exceed (in habitable rooms) 47 dB and 41 dB respectively.

ACTIVITY NOISE EMISSIONS

The acoustic design of the commercial unit at ground floor is based on an acoustically 'worst case' use as a busy bar/restaurant, with amplified music.

MCC requirements are that "where entertainment noise is proposed the L_{Aeq} (entertainment noise) shall be controlled to 10 dB below the L_{A90} (without entertainment noise) in each octave band at the façade of the nearest noise sensitive location."

In order to determine the minimum required sound insulation performance of the glazing at the proposed site, noise break out calculations have been undertaken.

It is likely that the doors to the proposed development will be opened frequently, and so a door with relatively low sound insulation performance was used within our calculations to reflect this. In the calculation, a door with a sound insulation performance of 26dBR_w was used. For the glazing, a sound insulation performance of 42dBR_w and 36dBR_w+C_{tr} was used as detailed above.

The noise break-out calculation as used to derive the limiting sound pressure levels within the commercial unit for any amplified music is presented as Figure 1, below;

Figure 1: Noise Break Out Calculation

Room to Exterior

Date: 24-Sep-19
Job No:
Project: Blossom Block B
Title: Noise Break Out

Frequency	63	125	250	500	1k	2k	4k	8k	A	NR
Room Lp	65	65	62	65	72	67	58	57	74	72
Wall SRI	22	24	25	30	36	38	39	39		

Wall dimensions length: 9.00 m
height: 6.50 m

Distance from wall to receive: 15.0 m

Directivity index of location (0, 3, 6 or 9): 3
0 = free space
3 = junction with surface
5 = junction of two surfaces
6 = junction of three surfaces

Frequency	63	125	250	500	1k	2k	4k	8k	A	NR
Receive Lp	24.7	22.7	17.8	16.2	17.1	10.4	0.0	-1.0	20.0	17.1
Limit	35	33	28	27	28	21	10	10	10dB below measured background at Nuovo Apts	
Difference	-10.3	-10.3	-10.2	-10.8	-10.9	-10.6	-10.0	-11.0		



The limiting sound pressure level within the commercial unit for any amplified music within the Block B commercial unit, for compliance with MCC criteria, is therefore as presented in Table 1, below.

Table 1: Limiting Music Noise Levels in Commercial Unit

	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	dBA
Limiting music level in commercial unit, dBL _{Aeq,T}	65	65	62	65	72	67	58	57	74

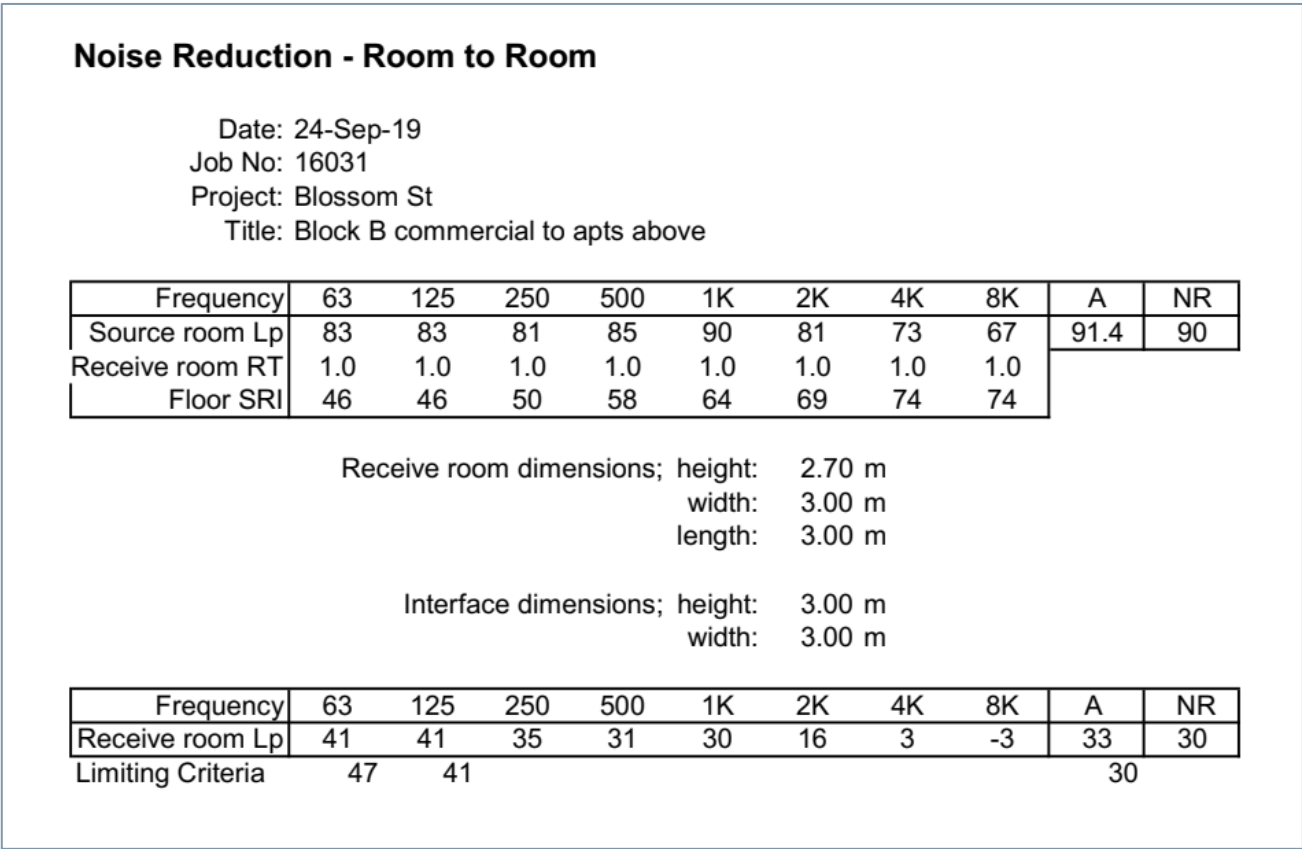
As discussed above, the proposed commercial unit would not have live music or performance entertainment and is not heavily reliant on amplified music. These limits are therefore compatible with the proposed use.

NOISE TRANSFER TO APARTMENTS ABOVE

The separating floor to the apartments above consists of 250mm concrete with 160mm Rockwool soffit slab to the underside.

Based on the predicted sound insulation performance of the slab, and a typical noise level within a lively café/bar as measured by dBx Acoustics (including speech and amplified music), a calculation of noise transfer to the apartments above is presented in Figure 2, below.

Figure 2: Noise Transfer Via Slab



It can be seen that, while the floor slab is sufficient to control low frequency noise in accordance with the requirements of MCC, the requirement within BS8233:2014 for internal ambient noise levels in bedrooms at night not to exceed 30dBL_{Aeq,T} would be exceeded by 3dB. We therefore recommend that a plasterboard ceiling (12.5mm board on MF grid)

should be applied throughout the commercial unit. A calculation showing the resultant noise transfer with this ceiling in place (and assuming retention of the Rockwool soffit insulation) is presented as Figure 3, below.

Figure 3: Noise Transfer to Apartment with Ceiling

Noise Reduction - Room to Room

Date: 24-Sep-19
 Job No: 16031
 Project: Blossom St
 Title: Block B commercial to apts above

Frequency	63	125	250	500	1K	2K	4K	8K	A	NR
Source room Lp	83	83	81	85	90	81	73	67	91.4	90
Receive room RT	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Floor SRI	42	57	62	70	78	84	89	89		

Receive room dimensions; height: 2.70 m
 width: 3.00 m
 length: 3.00 m

Interface dimensions; height: 3.00 m
 width: 3.00 m

Frequency	63	125	250	500	1K	2K	4K	8K	A	NR
Receive room Lp	45	30	23	19	16	1	-12	-18	23	16
Limiting Criteria	47	41							30	

It can be seen that, with this ceiling in place, the requirements of BS8233 and MCC are met.

BUILDING SERVICES NOISE EMISSIONS

At the time of writing there is no information available on proposed building services plant. It is assumed that this will form part of the tenant fit-out.

In accordance with MCC criteria, externally mounted ancillary plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a BS 4142 rating level (see below) of 5 dB L_{Aeq} below the typical background L_{A90} level at the nearest noise sensitive location. This means that plant should be designed to achieve a rating level of no more than $43dB_{L_{Aeq,Tr}}$ at the Nuovo Apartments on Blossom Street.



I trust this is helpful at this stage, but if you have any questions, please do not hesitate to ask.

Kind regards,

DocuSigned by:
Susan Witterick
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SUSAN WITTERICK

Director

CHECKED BY;

BEN TOMLIN

Principal Acoustic Consultant