09/07/2025

Mr James Moult
Bruntwood
Union
2 – 10 Albert Square
Manchester, M2 6LW

Unit 11, Brunel Court, Gadbrook Park, CW9 7LP
01565 632535
info@solacoustics.co.uk
www.solacoustics.co.uk

Planning Condition 5 Discharge Report

117-119 Portland Street – Planning Condition 5 Discharge Report

1 Introduction

1.1 This Planning Condition Discharge Report provides a summary of the findings of the on-site gym floor noise tests, as conducted by Sol Acoustics at 117-119 Portland St, Manchester M1 6ED.

1.2 The development at 117-119 Portland Street has received planning permission (Planning Reference: 139763/FO/2024). This Planning Condition Discharge Report has been undertaken in order to discharge Condition 5, which states:

> *"5) (a) Notwithstanding the details within the Sol Acoustics, 27 March 2024) before the fitting out of the gym area as shown in dwg 099 LOWER GROUND FLOOR PLAN commences a scheme for acoustically insulating the space to ensure that there is no unacceptable level of noise transfer from this unit to the office accommodation above or any unacceptable noise break out shall be submitted to and approved in writing by the City Council as local planning authority. This should take into account the ProPG: Gym Acoustics Guidance, which includes the use of G curves to form the basis of the acoustic design. Noise from gym activities such as impact machines and free weights areas will need to be included within the assessment and details of any acoustic insulation / acoustic floor build up recommendation for these areas.*
>
> *Where entertainment noise is proposed the LAeq (entertainment noise) shall be controlled to 5dB below the LA90 (without entertainment noise) in each octave band at the facade of the nearest noise sensitive location.*
>
> *The approved noise insulation scheme shall be completed before the use of the gym commences. The approved details shall be implemented and remain in place for as long as the unit is in use.*

(b) Prior to the use commencing a post completion report to verify that all of the recommended mitigation measures have been installed and effectively mitigate any potential adverse noise impacts on the accommodation above arising directly from the proposed development shall be submitted and agreed in writing by the City Council as local planning authority. Prior to occupation any non compliance shall be suitably mitigated in accordance with an agreed scheme.

Reason - To secure a reduction in noise in order to protect future building occupiers from noise nuisance, pursuant to policies SP1 and DM1 of the Core Strategy and saved UDP Policy DC26."

1.3 Gym floor testing was undertaken on Friday 13 June 2025, in accordance with the ProPG: Gym Acoustics Guidance document published in March 2023.

1.4 An assessment of the gym music system noise was undertaken on Tuesday 1 July 2025 in order to assess the entertainment noise impacts in line with MCC's Planning Condition 5 requirements.

1.5 The noise levels were measured in the adjacent spaces and compared with the relevant guidance as presented in the ProPG: Gym Acoustics Guidance document.

1.6 The impact noise from the gym is not deemed to result in any adverse effect for the occupants of the spaces, given the location in a historic building, the onerous criteria, the low frequency nature of the exceedances and the fact the gym serves as amenity to the occupants themselves.

1.7 The music noise from the gym is not deemed to result in any adverse effect for the occupants of the adjacent spaces, as well as external noise sensitive locations.

2 Description of Site

2.1 General Overview

2.1.1 The site is located at 117-119 Portland St, Manchester M1 6ED. The development comprises the refurbishment and fitout of the existing office building at 117-119 Portland Street to form new tenanted office spaces fit out to a CAT B standard consisting of meeting rooms and multi-occupancy offices of varying sizes, together with staff welfare facilities and basement level gym.

2.1.2 The site is located in a predominantly commercial area. It only has one directly adjacent premise, 113 Portland Street which comprises of commercial offices and therefore there are no residential premises in the immediate vicinity.

2.1.3 The gym is located on the lower ground floor (basement) in the western corner of the development so that it is not directly adjacent to any third-party premises. The direct adjacencies are all part of the development and have access to the gym and are as follows:

- Lower ground floor lounge area
- Lower ground floor lounge/presentation space
- Ground floor lounge/hot desk area
- Ground floor work pods

2.1.4 As the building is a Grade II listed old Victorian warehouse, various iron columns have been retained throughout the building, including in and around the gym area. Figures 1 and 2 show the lower ground floor and ground floor layouts, respectively.

2.2 Gym Floor Construction

2.2.1 The installed floor build-up consisted of Pliteq "GenieMat Fit70" resilient tile and "GenieMat FF50" underlay, for a total system depth of 120mm.

2.2.2 The available vertical space is limited in the gym (once again due to the historic nature of the building) and the installed 120mm floor buildup is understood to be at the maximum depth possible.

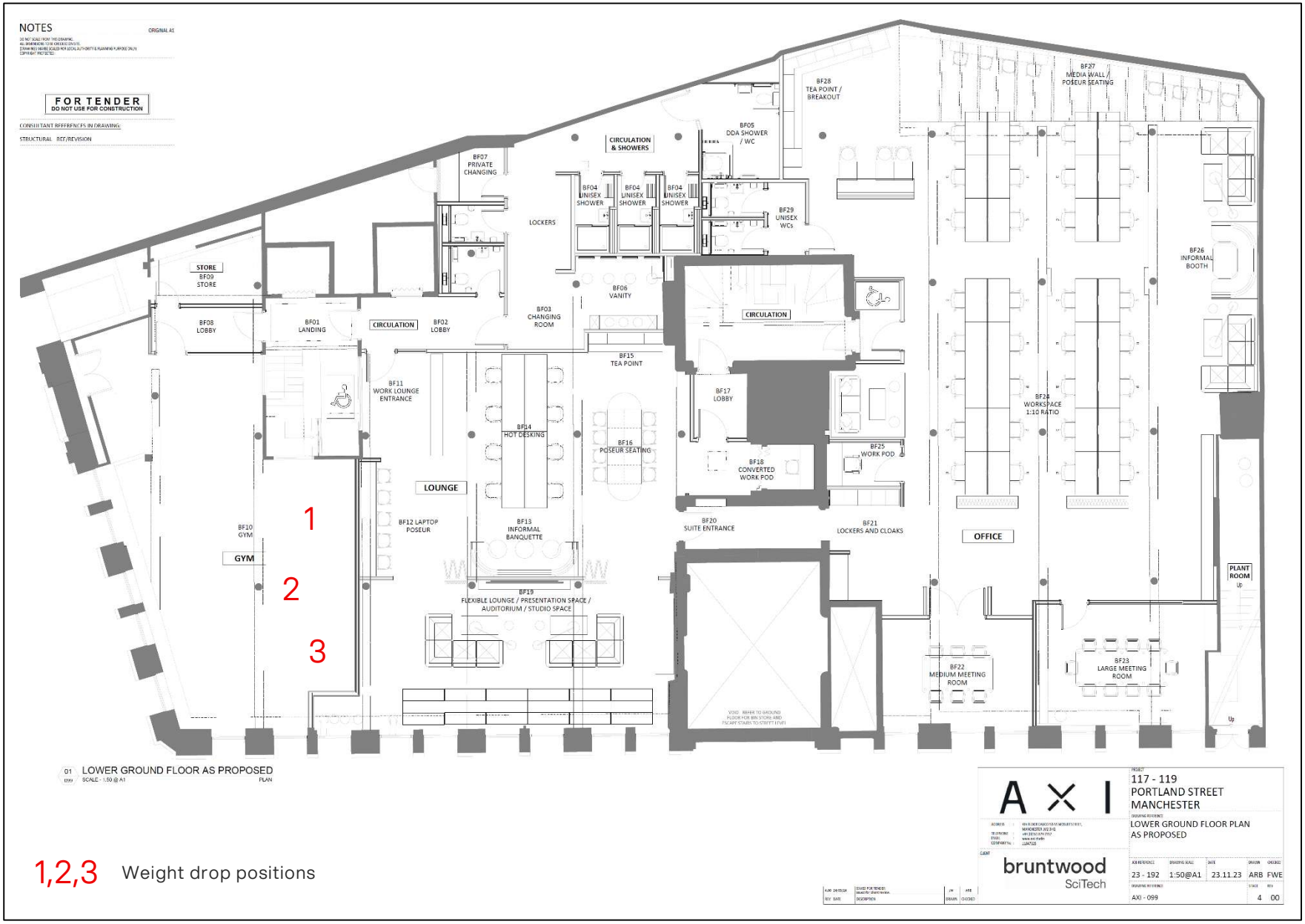


Figure 1: Lower ground floor plan

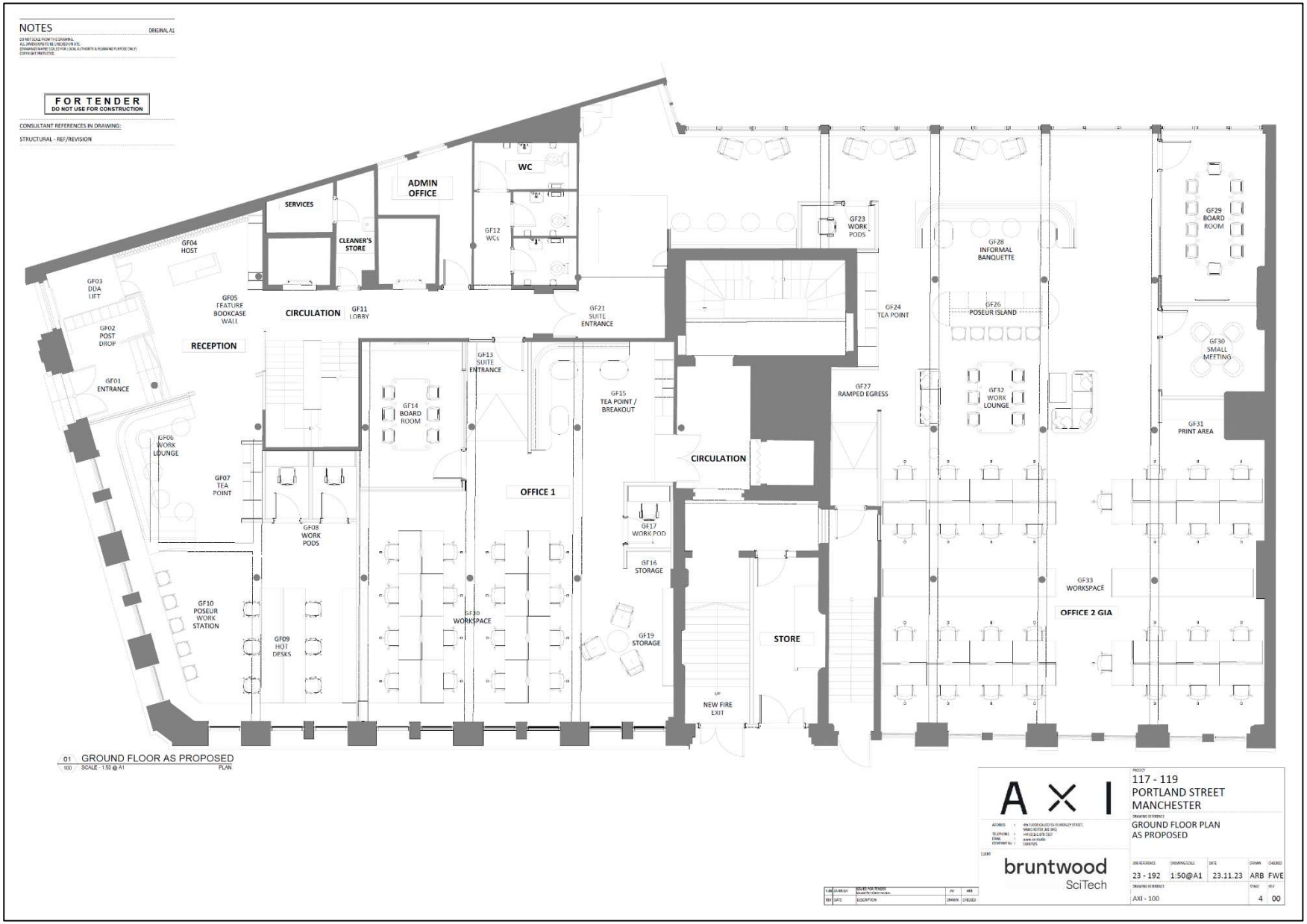


Figure 2: Ground floor plan

3 Details of the Gym Activity Investigation

3.1 Survey Methodology

3.1.1 Sol attended the site during Friday 13 June 2025 in order to undertake noise tests of the gym floor as located at 117-119 Portland St, Manchester M1 6ED.

3.1.2 The testing was performed in accordance with the methodologies presented in the ProPG: Gym Acoustics Guidance.

3.1.3 The Gym Acoustic Guidance recommends a minimum of three drop positions in the test area. In this case, three drop positions were judged to be able to provide a representative sample of the floor performance. Figure 1 presents the drop positions within the gym.

3.1.4 A 24kg vinyl coated kettlebell was dropped from a height of 0.5 metres at each of the three positions, three times each.

3.1.5 The resultant sound level was measured in the four test spaces using a tripod mounted microphone at a height of 1.5 metres above ground level.

3.1.6 Sound pressure level measurements were conducted using an omnidirectional microphone. The sound pressure level measurements comprised of full broadband A-weighted, L_{AmaxF}, and third-octave unweighted, $L_{max,f}$ sound pressure level measurements.

3.1.7 All noise measurements were carried out using Type 1 Precision Grade noise monitoring equipment. The complete noise measuring systems were field calibrated immediately prior to and following the noise survey periods. *Additional survey details are presented in Appendix B.*

3.2 Survey Results

Gym Floor Test Results

3.2.1 Figures 3,4,5 and 6 provide a graphical representation of the results compared against the G-Curves, as defined in the Gym Acoustic Guidance.

3.2.2 The full measurement results are presented in Appendix B.

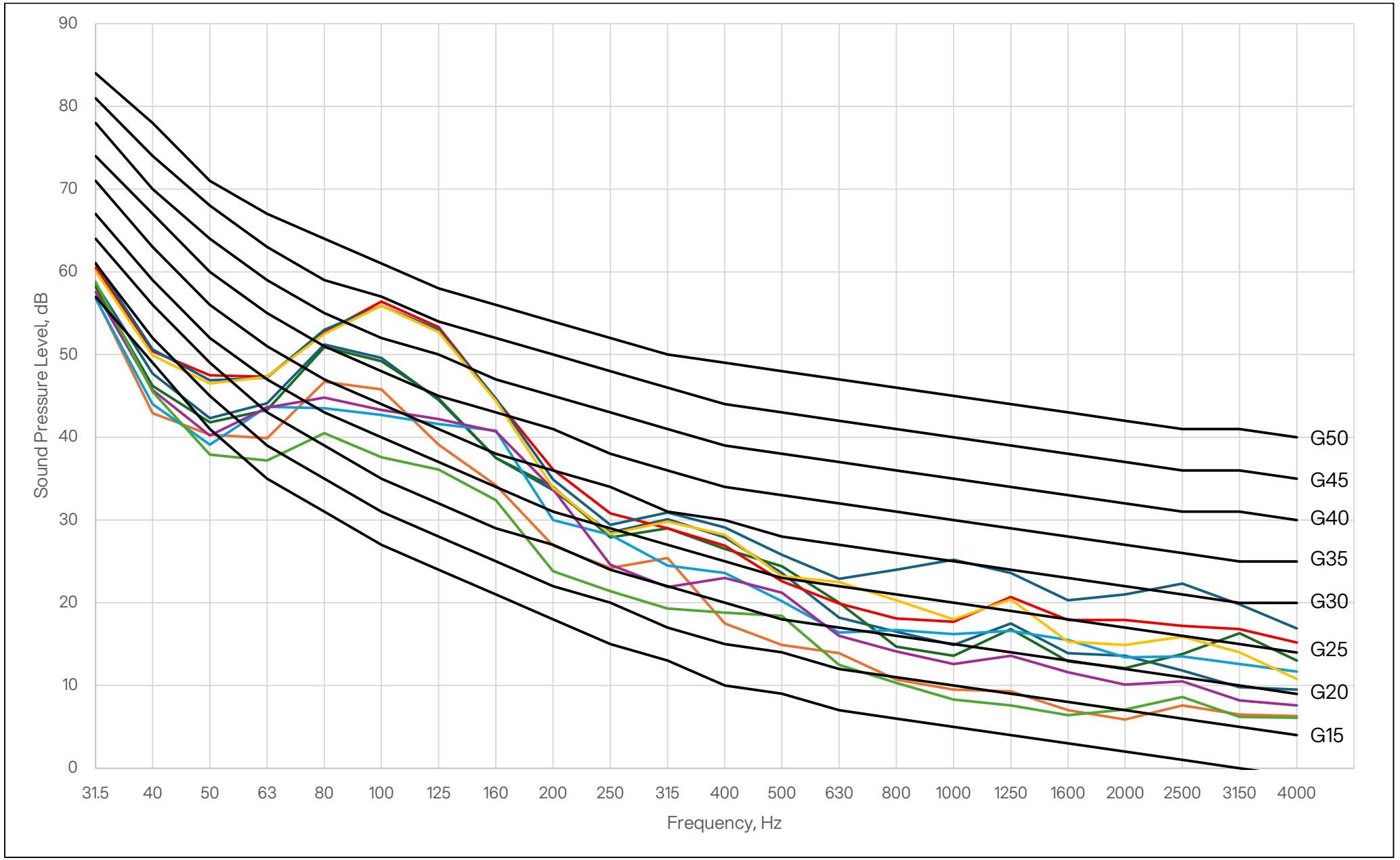


Figure 3: **Resultant maximum sound pressure levels in the LGF Lounge area compared with G-Curves**

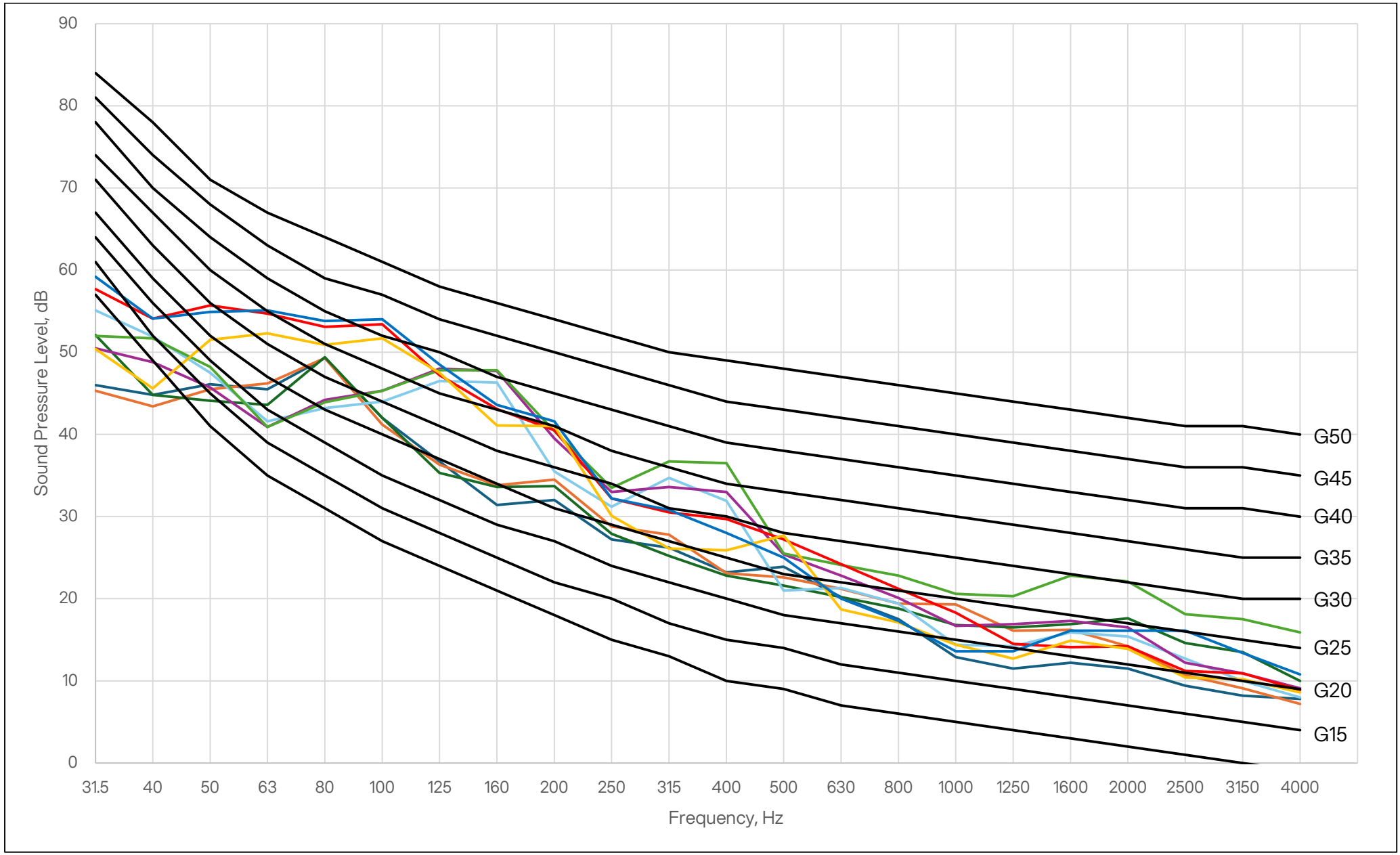


Figure 4: **Resultant maximum sound pressure levels in the LGF Presentation space compared with G-Curves**

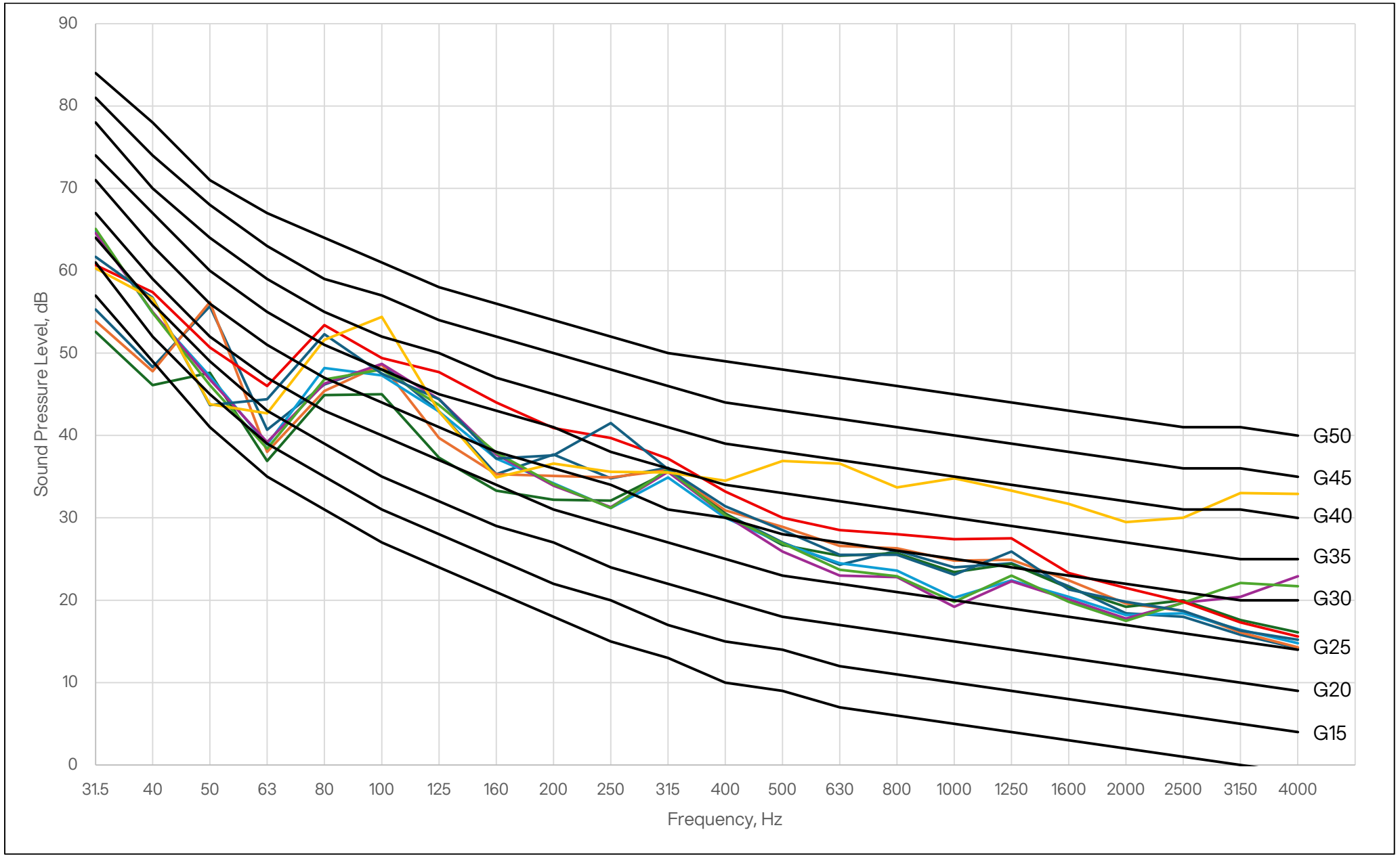


Figure 5: **Resultant maximum sound pressure levels in the GF Hot desking area compared with G-Curves**

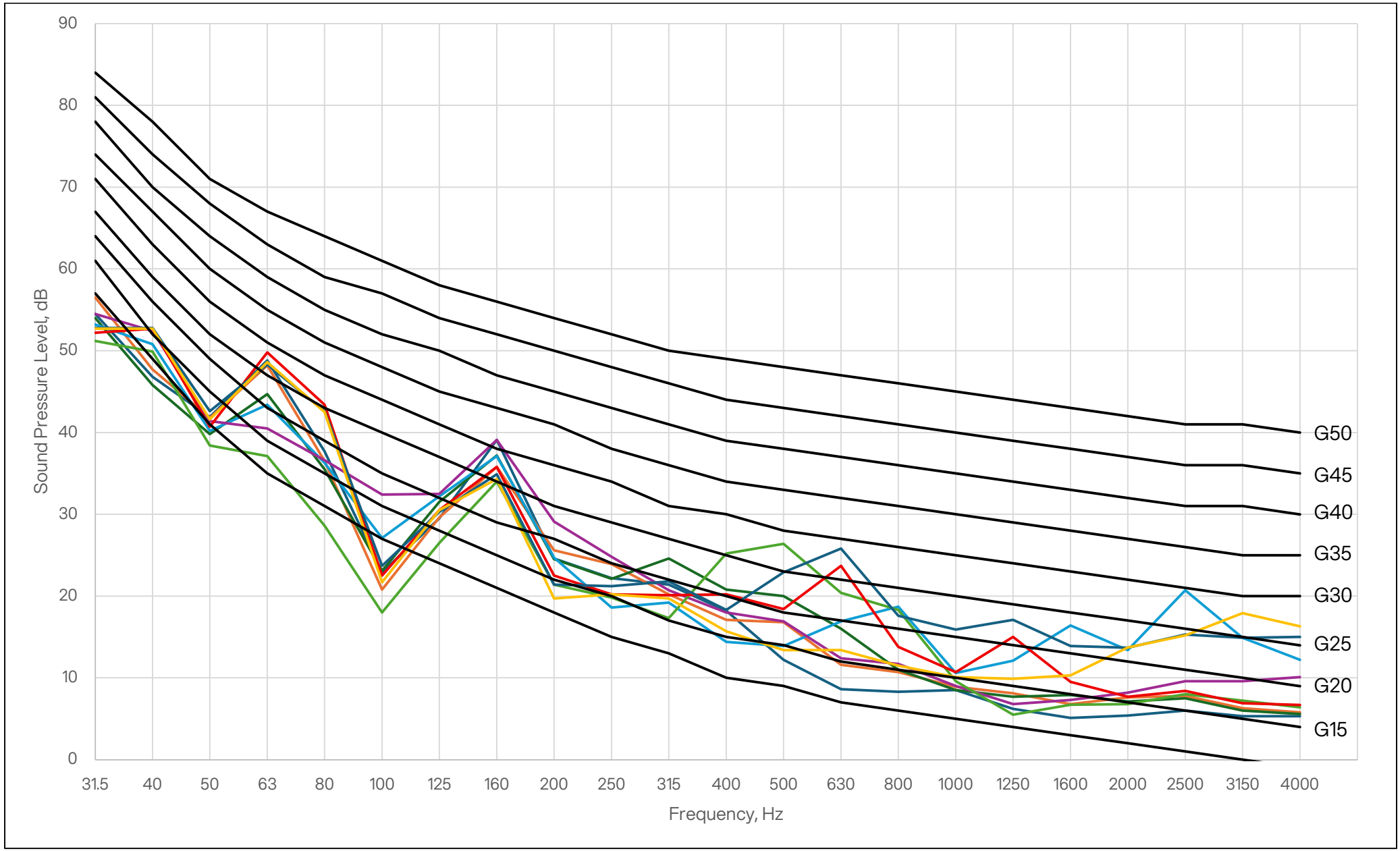


Figure 6: Resultant maximum sound pressure levels in the GF Work pods compared with G-Curves

Assessment of Results

3.2.3 For commercial offices, the recommended criteria range from heavy impact sound set out in the ProPG Gym Acoustic Guidance is **G35-G45**. The guidance states that "*levels below the upper values tended to avoid significantly adverse impacts (SOAEL) occurring.*"

3.2.4 These levels are only a guideline, and the guidance states site-specific context should be taken into consideration.

3.2.5 During design stage, Sol proposed more onerous design targets of G35 in the LGF Lounge, LGF Presentation space and GF Hot desks, and G25 in the GF Work pods. However, these criteria are more onerous than the appropriate criteria set out in the ProPG Gym Acoustic Guidance and ultimately, due to the nature of the works (refurbishment of Grade II listed Victorian building) these more onerous criteria have not been practical to achieve.

3.2.6 **For all the spaces tested, there are no exceedances of the upper limit of G45 suggested in the ProPG Gym Acoustic Guidance.**

4 Details of the Gym Music Noise Investigation

4.1 Survey Methodology

4.1.1 Sol attended the site during Monday 1 July 2025 in order to undertake noise impact tests of the gym music system and façade located at 117-119 Portland St, Manchester M1 6ED.

4.1.2 The music system, as installed by the AV consultant, was set to the highest volume limit possible within the gym. A pre-selected playlist of songs selected by the operator was played through the system.

4.1.3 The reverberant sound pressure level was measured in the gym using a handheld microphone moved throughout the space, over a measurement period of up to 5 minutes to capture representative music noise levels within the gym.

4.1.4 The resultant sound level was measured in the two internal test spaces using a handheld microphone moved throughout the space over a measurement period of up to 5 minutes to capture representative music noise levels within the adjacent spaces.

4.1.5 The resultant external position was measured at 1m from the façade, using a handheld microphone at a height of 1.5 metres above ground level over a measurement period of up to 5 minutes to capture representative music noise levels externally at the façade.

4.1.6 Sound pressure level measurements were conducted using an omnidirectional microphone. The sound pressure level measurements comprised of full broadband A-weighted, $L_{Aeq,T}$, and third-octave unweighted, $L_{eq,T}$ sound pressure level measurements.

4.1.7 All noise measurements were carried out using Type 1 Precision Grade noise monitoring equipment. The complete noise measuring systems were field calibrated immediately prior to and following the noise survey periods. *Additional survey details are presented in Appendix B.*

4.2 Survey Results

Gym Music Noise Test Results

4.2.1 Figures 7 and 8 provide a graphical representation of the results compared against the G-Curves, as defined in the Gym Acoustic Guidance.

4.2.2 The Table 11 below details the measured reverberant music noise level within the gym when the in-built music system was set to its maximum level setting.

Description	Measured Internal Noise Level (dB) in each Octave Band (Hz)							dBA
	63	125	250	500	1000	2000	4000	
$L_{Aeq,5mins}$	60	64	60	60	59	54	50	63

Table 11: Measured gym music maximum noise level

4.2.3 Table 12 below shows the predicted external noise level based on the measured maximum internal noise levels and the predicted performance of the façade.

Description	Measured Internal Noise Level (dB) in each Octave Band (Hz)							dBA
	63	125	250	500	1000	2000	4000	
Calculated External $L_{Aeq,5mins}$	30	28	28	23	12	4	3	23

Table 12: Predicted external noise level from gym music noise

4.2.4 Table 13 below details the measured external noise level with and without the gym music system set to its maximum level setting.

Description	Measured Internal Noise Level (dB) in each Octave Band (Hz)							dBA
	63	125	250	500	1000	2000	4000	
$L_{Aeq,5mins}$ with music playing	72	67	65	64	64	58	52	67
$L_{Aeq,5mins}$ without music playing	73	71	70	68	66	61	56	70

Table 13: Measured gym music noise levels externally

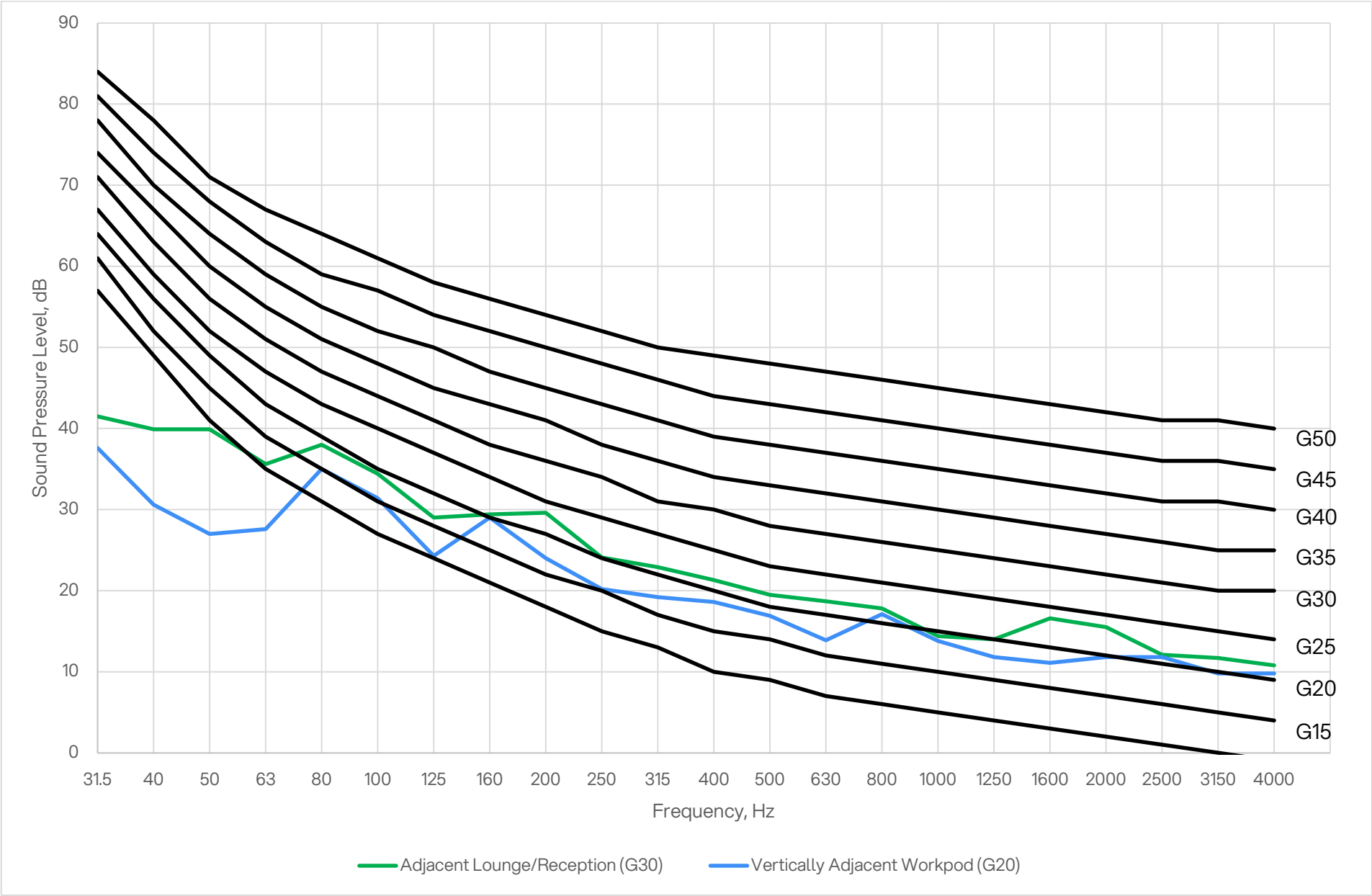


Figure 3: Resultant sound pressure levels in the LGF Lounge area and GF Work Pods compared with G-Curves

Assessment of Results

4.2.5 For commercial offices, the recommended criteria range from airborne sound in the ProPG Gym Acoustic Guidance is **G25-G35**. The guidance states that "*levels below the upper values tended to avoid significantly adverse impacts (SOAEL) occurring.*"

4.2.6 These levels are only a guideline, and the guidance states site-specific context should be taken into consideration.

4.2.7 The maximum allowable operational internal noise levels in the gym are set out in Table 14 below. These noise levels have been calculated based on the G curves are as defined in ProPG: Gym Acoustics Guidance:

Description	Maximum Internal Noise Level (dB) in each Octave Band (Hz)							dBA
	63	125	250	500	1000	2000	4000	
$L_{Aeq,5mins}$	89	87	76	74	73	75	73	81

Table 14: Gym music noise limits

4.2.8 The internal criteria imposed for airborne sound (e.g. music) by Sol are G30 in the LGF Lounge, LGF Presentation space and GF Hot desks, with G20 imposed in the GF Work pods. The external criteria imposed by the MCC Planning Condition is L_{Aeq} noise levels not exceeding 43 dBA (5dB below the existing background at night) when measured at an approximate distance of 3m from the façade (representative of own development windows directly above gym).

4.2.9 Any mid-high frequency (>500Hz) minor exceedances were deemed by the tester to be as a result of third-party noise (e.g. road traffic) and limitations due to the noise floor of the measurement equipment not due to the music playing in the gym as these exceedances were also present in measurements absent of music noise.

4.2.10 For all the tested spaces, the measured noise levels as a result of the music noise within the gym comply with the proposed criteria.

4.2.11 Music noise was not deemed to be audible above the ambient noise level externally 1m from the gym façade, as indicated in Table 12 the external noise level is considerably above the internal measured level

4.2.12 Additionally, the internal noise level within the gym is significantly below the recommended maximum internal music noise level, as based on the building fabric and to comply with the Planning Condition requirements.

4.2.13 Furthermore, our assessment is based on minimum background noise levels. Once the adjacent rooms are in use there will be an increased level of ambient noise which shall contribute to masking of any gym activity and music noise transfer.

4.2.14 ***In conclusion, the internal music noise from the gym is not deemed to result in any adverse effect for the occupants of the spaces, in addition to being inaudible externally 1 metre from the façade of the building and is in line with the Planning Condition requirements.***

5 Conclusion

5.1 Weight drop testing was performed in accordance with ProPG: Gym Acoustics Guidance by Sol Acoustics. The results were compared against the Guide Criteria range for heavy impact sound (**G35-G45**). In all cases the maximum noise level in adjacent spaces from heavy impact sound does not exceed the upper limit of the criteria range (G45).

5.2 Based on the ProPG: Gym Acoustics Guidance, measurements of the gym music system operating at the maximum volume were undertaken by Sol Acoustics. The results were compared against the Guide Criteria range for airborne sound (**G25-G35**). In all cases the noise level in adjacent spaces from airborne sound does not exceed the lower limit of the criteria range (G25).

5.3 A maximum permissible internal noise level for the gym had previously been set based on the estimated performance of the façade and resultant noise break-out to the nearest noise sensitive receptor. As seen from the results in Table 11, the measured reverberant internal sound level within the gym when the music system is operational at its maximum level is below the calculated maximum permissible level as based on the building fabric structure.

5.4 The predicted external noise level from the gym based on the measured internal music noise level is expected to be significantly below the criteria of the Planning Condition.

5.5 In addition to the above, the measured ambient external noise level was dominated by road noise traffic and no increase in noise level was measurable when the gym music was playing at the maximum level.

5.6 As such it is expect the requirements of Planning Condition 5 have been met and the Planning Condition should be discharged.

Yours sincerely

For and on behalf of Sol Acoustics Limited



Mike Hartley MIOA

Senior Acoustic Consultant

APPENDIX A
Glossary of Acoustic Terms

Term	Abbreviation	Description
Decibel	dB	A scale for comparing the ratios of two quantities, including sound pressure and sound power.
A-weighting	dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the change in sensitivity of the human ear at varying frequencies.
Sound Pressure Level	L_{pA}	A measure of the sound pressure at a particular location. Typically expressed in dB(A) referenced to $2x10^{-5}$ Pascals.
Equivalent Continuous Sound Level	$L_{Aeq,T}$	The steady level of sound over a prescribed period of time which would contain the same total sound energy as the actual fluctuating noise under consideration in the same period of time.
Statistical Sound Levels	L_{A10} and L_{A90}	The level of noise exceeded for a percentage of the time period being sampled, namely 10% or 90% respectively.
Background Sound Level	$L_{A90,T}$	The A-weighted sound pressure level of the residual noise at the assessment position that is exceeded for 90% of the time period being sampled.
Maximum Sound Level	L_{Amax}	The maximum sound or noise level determined with instrumentation set to either a fast time weighting, L_{AFmax}, or a slow time weighting, L_{Asmax}, as occurring during the time period being sampled.
Sound Power Level	L_{wA}	A measure of the total sound energy radiated from a source. Like sound pressure levels, this is also expressed in dB(A) terms, but it is referenced to 1×10^{-12} W.
Broadband		Sound sampled over a wide range of frequencies.
Narrow band		Sound sampled over a specific, restricted frequency range. Used to ascertain the amplitude and significant of individual, audible tones, and to assist in identifying particular sources of noise within a complex, multi-source soundscape environment.
Ambient Sound	$L_{eq,T}$	Totally encompassing sound in a given situation at a given time, usually composed of sound from many sources, both near and far.
Specific Sound Level	$L_{eq,T}$	The Equivalent Continuous A-Weighted Sound Level at an assessment position produced by a specific sound over a given reference time interval, *Tr*
Rating Level	$L_{Ar,Tr}$	The Specific Sound Level plus any adjustment for the acoustic characteristic features of the noise (e.g. intermittency, tones etc.).
Residual Noise	$L_{Aeq,T}$	The ambient sound remaining at given position in a given situation, when the specific sound source is suppressed to such an extent that it no longer contributes to the ambient sound.
Sound Reduction Index	*SRI*	The reduction in sound energy when transmitted through a panel or similar planar element, typically used in relation to single octave or one-third octave frequency band values.
Weighted Sound Reduction Index	R_w	The Sound Reduction Index expressed as a single figure, as expressed against a reference curve.
Dynamic Insertion Loss	*DIL*	Reduction in acoustic energy resulting from the insertion of a noise control element (e.g. an attenuator, acoustic enclosure etc.).
Free Field		Noise measuring location that is free from the presence of sound reflecting objects (except the ground), usually taken to mean being at least 3.5 metres distance from reflective surface(s) or greater.

APPENDIX B
NOISE SURVEY DETAILS AND SUMMARY RESULTS

Location

117-119 Portland St, Manchester M1 6ED.

Personnel

Chris Downing MMath, AMIOA – Sol Acoustics

Ben Sun Wai MEng – Sol Acoustics

Instrumentation

01dB Cube Sound level meter (serial no. 11348)

01dB Pre22 Microphone preamplifier (serial no. 1805362)

GRAS 40CD Microphone capsule (serial no. 260642)

01dB CAL 21 acoustic calibrator (serial no. 34675320)

Methodology

Before and after the measurements the noise monitoring equipment was calibrated to an accuracy of ±0.4dB using the Cal 21 Calibrator. The calibrator produces a sound pressure level of 94dB re 2 x 10^{-5} Pa @ 1kHz.

Measurement Results

Tables B1, B2, B3 and B4 present the full measurement data as measured in the LGF Lounge area, LGF Presentation space, GF Hot Desking area and GF Work pods, respectively.

Drop Positions		Unweighted Maximum Sound Pressure Level $L_{max,F}$, dB @ One-Third Octave Band Central Frequency, Hz																				
		31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k
Drop Position 1	Drop 1	59	48	42	44	51	50	45	38	34	29	30	28	24	18	17	15	18	14	14	12	10	10
	Drop 2	57	43	40	40	47	46	39	34	27	24	25	18	15	14	11	10	9	7	6	8	7	6
	Drop 3	58	46	42	43	51	49	45	38	34	28	29	27	24	20	15	14	17	13	12	14	16	13
Drop Position 2	Drop 1	57	44	39	44	44	43	42	41	30	28	25	24	20	16	17	16	17	16	13	14	13	12
	Drop 2	58	46	40	44	45	43	42	41	34	25	22	23	21	16	14	13	14	12	10	11	8	8
	Drop 3	59	46	38	37	41	38	36	32	24	21	19	19	18	13	10	8	8	6	7	9	6	6
Drop Position 3	Drop 1	61	50	48	47	53	56	53	45	36	31	29	27	23	20	18	18	21	18	18	17	17	15
	Drop 2	61	51	47	47	53	56	53	45	35	29	31	29	26	23	24	25	24	20	21	22	20	17
	Drop 3	60	50	47	47	53	56	53	44	34	28	30	28	23	23	20	18	20	15	15	16	14	11

Table B1: Resultant maximum sound pressure levels in the LGF Lounge area

Drop Positions		Unweighted Maximum Sound Pressure Level $L_{max,F}$, dB @ One-Third Octave Band Central Frequency, Hz																				
		31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k
Drop Position 1	Drop 1	46	45	46	46	49	42	37	31	32	27	26	23	24	20	18	13	12	12	12	9	8	8
	Drop 2	45	43	46	46	49	41	36	34	35	29	28	23	23	21	19	19	16	16	14	11	9	7
	Drop 3	52	45	44	44	49	42	35	34	34	28	25	23	22	20	19	17	17	17	18	15	14	10
Drop Position 2	Drop 1	55	52	48	42	43	44	47	46	36	31	35	32	21	21	19	14	14	16	15	13	10	8
	Drop 2	51	49	46	41	44	45	48	48	40	33	34	33	25	23	20	17	17	17	17	12	11	9
	Drop 3	52	52	48	41	44	45	48	48	40	34	37	37	26	24	23	21	20	23	22	18	18	16
Drop Position 3	Drop 1	58	54	56	55	53	53	47	43	41	32	31	30	27	24	21	18	15	14	14	11	11	9
	Drop 2	50	46	52	52	51	52	48	41	41	30	26	26	28	19	17	14	13	15	14	10	10	9
	Drop 3	59	54	55	55	54	54	49	44	42	32	31	28	25	20	17	14	14	16	16	16	13	11

Table B2: Resultant maximum sound pressure levels in the LGF Presentation space

Drop Positions		Unweighted Maximum Sound Pressure Level $L_{max,F}$, dB @ One-Third Octave Band Central Frequency, Hz																				
		31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k
Drop Position 1	Drop 1	55	48	56	41	46	49	43	35	38	35	36	31	27	24	26	24	25	22	18	18	16	14
	Drop 2	54	48	56	38	45	49	40	35	35	35	36	31	29	27	26	25	25	22	20	19	16	14
	Drop 3	53	46	48	37	45	45	37	33	32	32	36	31	27	25	26	23	24	22	19	20	18	16
Drop Position 2	Drop 1	65	55	47	39	48	47	43	37	34	31	35	30	27	25	24	20	22	20	18	18	16	15
	Drop 2	65	55	47	39	46	49	44	38	34	31	36	30	26	23	23	19	22	20	18	20	20	23
	Drop 3	65	55	46	38	47	48	44	38	34	31	36	30	27	24	23	20	23	20	18	20	22	22
Drop Position 3	Drop 1	61	57	51	46	53	49	48	44	41	40	37	33	30	29	28	27	28	23	22	20	17	16
	Drop 2	62	57	44	44	52	48	44	37	38	42	36	31	29	26	26	23	26	21	20	19	16	15
	Drop 3	60	57	44	43	52	54	43	35	37	36	36	35	37	37	34	35	33	32	30	30	33	33

Table B3: Resultant maximum sound pressure levels in the GF Hot desking area

Drop Positions		Unweighted Maximum Sound Pressure Level $L_{max,F}$, dB @ One-Third Octave Band Central Frequency, Hz																				
		31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k
Drop Position 1	Drop 1	55	47	42	49	38	23	30	39	25	22	21	18	12	9	8	9	6	5	5	6	5	5
	Drop 2	57	48	42	48	37	21	30	36	26	24	20	17	17	12	11	9	8	7	8	8	6	6
	Drop 3	54	46	40	45	36	23	32	37	25	22	25	21	20	16	11	9	8	8	7	8	6	6
Drop Position 2	Drop 1	53	51	40	43	36	27	32	37	25	19	19	14	14	17	19	11	12	16	13	21	15	12
	Drop 2	55	52	41	41	37	32	33	39	29	25	21	18	17	12	12	9	7	7	8	10	10	10
	Drop 3	51	50	38	37	29	18	27	34	21	20	17	25	26	20	18	10	6	7	7	8	7	6
Drop Position 3	Drop 1	52	53	41	50	43	23	31	36	23	20	20	20	18	24	14	11	15	10	8	8	7	7
	Drop 2	53	53	43	48	43	24	30	35	21	21	22	18	23	26	18	16	17	14	14	15	15	15
	Drop 3	53	53	42	49	43	22	31	34	20	20	20	16	13	13	12	10	10	10	14	15	18	16

Table B4: Resultant maximum sound pressure levels in the GF Work pods