PO Box 1030, Warrington, Cheshire WA4 9FJ
t. 01925 723333 www.adcacoustics.co.uk

ARR/C/2411.03

24th May 2023

The Washhouse,19 Shudehill, M4 2AF

Verification report for the noise impact of the operating "Secret Bar" and assessment of the proposed additional area.

Prepared for :-

The Washhouse Manchester Ltd
32 Beech Road
Manchester
M21 9EL

Prepared by :-

Andrew Raymond

ADC Acoustics is a trading name of Acoustic Design & Control Limited
Registered Office: One City Place, Queens Road, Chester, CH1 3BQ Registered in England and Wales 5117653

CONTENTS

1.0 SUMMARY

2.0 INTRODUCTION

3.0 PLANNING CONDITIONS

4.0 SURVEY DETAILS

4.1 Site Times and Personnel
4.2 Instrumentation
4.3 Measurement Positions
4.4 Survey Conditions

5.0 RESULTS AND DISCUSSIONS

5.1 Internal Noise Levels
5.2 External Noise Levels

6.0 PROPOSED SECOND FLOOR BAR

7.0 CONCLUSIONS/RECOMMENDATIONS

Appendix 1: Definition of Acoustic Terms
Appendix 2: Measurements in Full

1.0 SUMMARY

The area surrounding the proposed development is already extremely busy with road traffic, mechanical equipment, pedestrians and bars, some of them open until well into the early hours.

The Washhouse is a “Secret Bar” and, by design and branding, is visually and aurally hidden from the outside world. It is table service drink and the music inside is background music only. Outside, front and back, the impact is essentially zero.

Internally, we can confirm that all windows, doors, etc. are in good condition and well fitted. The sound system is simply a set of small speakers to provide background music which runs at a set level and does not change. There general noise is from the making of the cocktails behind the bar and customers’ voices. It is not at all boisterous, but even if it was, it is inconceivable that there would be any significant impact.

The proposed second floor bar appears to be more or less identical in design and purpose and doors, windows, etc. are in good condition well fitted. The sound system is the same as the first floor bar. We understand that the shell construction is identical to lower floors, as one would naturally expect. There are no floors above it. Again, the impact can be expected to be essentially zero.

A R Raymond

P J Durell

2.0 INTRODUCTION

ADC was asked to carry out a verification assessment of the currently operating "Secret Bar" and, by reasonable inference, assess the proposed new bar at the second floor level.

3.0 PLANNING CONDITIONS

The basis of this assessment is Planning Condition 3 of Decision reference 129840/FO/2021.

> 3) The approved use shall be implemented (fit out) and operated in accordance with the noise levels and management measures which form the basis for the assessment as specified within the ADC Acoustics Noise Impact Assessment dated 25th March 2021
>
> The noise levels used for the assessment shall be set and subsequently controlled to ensure noise levels do not exceed those used under the assessment.
>
> The above noise management scheme shall be completed prior to occupation. A post completion report to verify that all of the specified noise levels within the above ADC Report are being met shall be submitted and agreed in writing by the City Council as local planning authority within the following timescales:
>
> (a) Ground floor of 19 Shudehill: within 3 months of the lockdown measures associated with the Covid19 pandemic having been eased
> (b) 1st and 2nd floors of 19 Shudehill and 2nd floor of 21-21 Shudehill: prior to the extended use commencing or within 3 months of the lockdown measures associated with the Covid19 pandemic having been eased (which ever is the later).
> and any non compliance suitably mitigated in accordance with an agreed scheme prior to occupation.
>
> Thereafter the premises shall operate in accordance with the approved noise levels and management measures
>
> Where entertainment noise is proposed the LAeq (entertainment noise) shall be controlled to 10dB below the LA90 (without entertainment noise) in each octave band at the facade of the nearest noise sensitive location, and internal noise levels at structurally adjoined residential properties in the 63HZ and 125Hz octave frequency bands shall be controlled so as not to exceed (in habitable rooms) 47dB and 41dB, respectively.
>
> For the avoidance of doubt should if higher music levels are required in the future than as specified in the above report then an updated assessment and recommendations will be required.
>
> Reason - To safeguard the amenities of the occupiers of the building and occupiers of nearby properties, pursuant to policies SP1 and DM1 of the Core Strategy

This report primarily covers the first half of the condition. From the 5th paragraph, where entertainment noise is referred to, we can essentially ignore as no entertainment noise takes place. However, we discuss the background music in the context of the assumptions of the original report.

4.0 SURVEY DETAILS

4.1 Site Times and Personnel

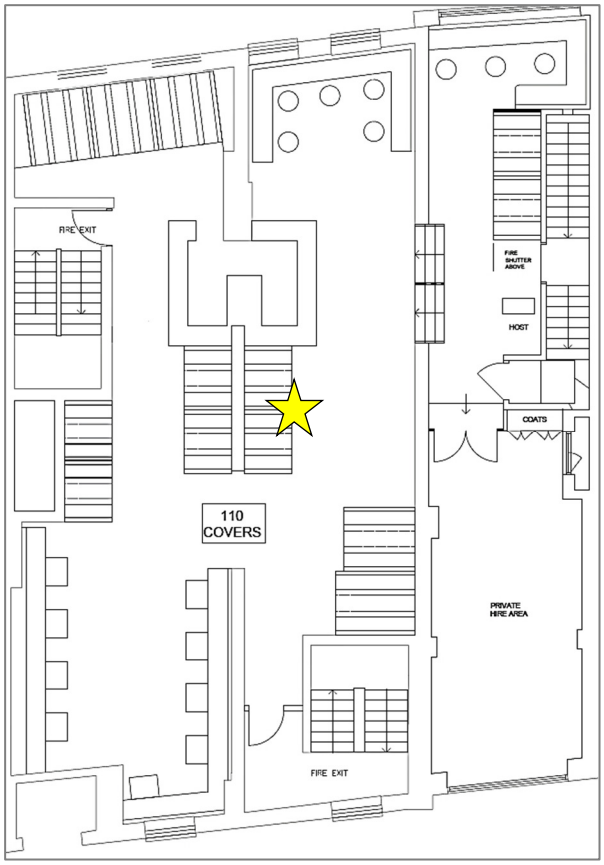
The site survey was carried out by Mark Pimlett of ADC Acoustics on the afternoon of Friday 12th May 2023. This was a time we were advised would be reasonably busy but when we would be unlikely to draw attention to the work and affect behaviour.

4.2 Instrumentation

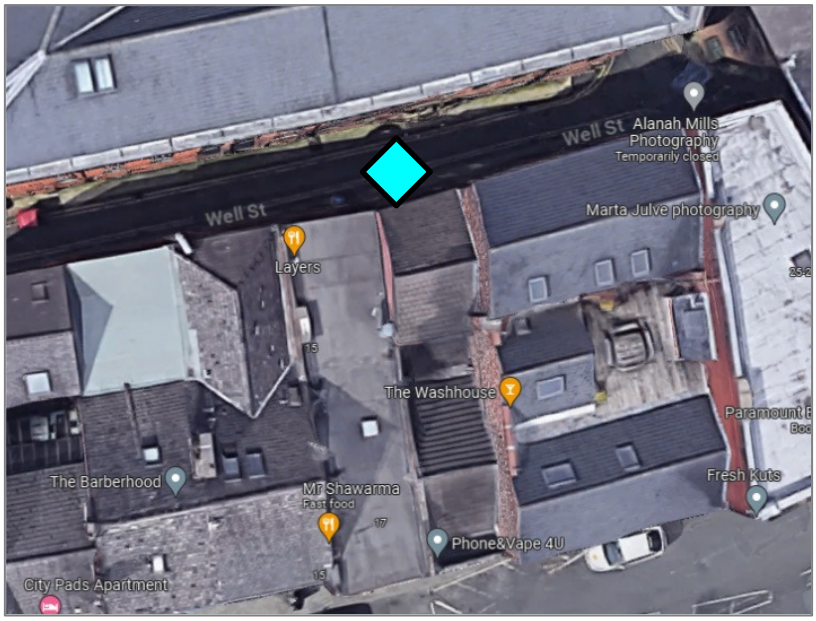
Instrumentation used was a Rion NL-52. This is a Class I sound level meter which holds a current calibration certificate and which was field-calibrated as necessary with no drift noted. The meter was set up to measure continuous 1 minute samples (in the bar area) and 5 minute samples (in the rear alley), all in terms of dB L_{eq}, dB L_{max} and dB L_{90} in overall A-weighted terms, and in octave bands across the frequency range. See Definition of Acoustic Terms in Appendix 1.

4.3 Measurement Positions

The public areas were reconnoitred for some time and the levels of conversation and background music were constant throughout. A representative central position near the bar was chosen for the measurements, as shown by the yellow star on the following plan.



In addition some measurements were also made centrally in the rear alley, as shown by the pale blue square below:-



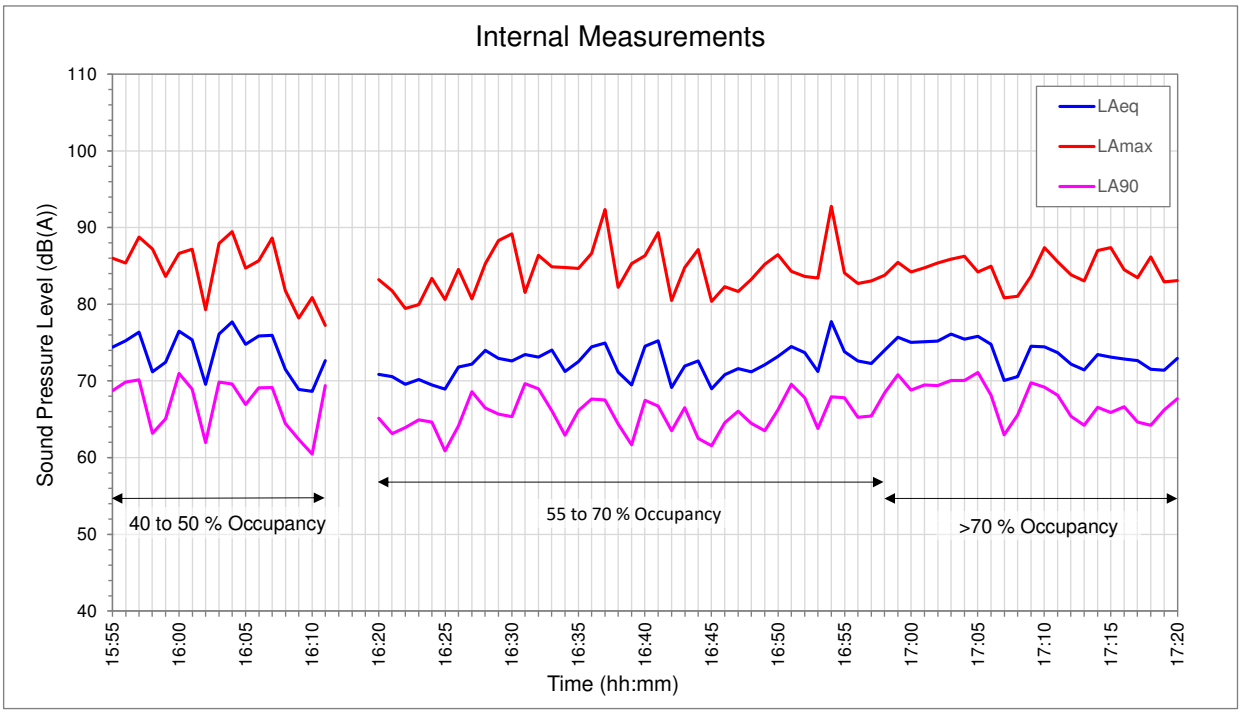
4.4 Survey Conditions

All guests are seated at pre-booked tables. The measurements were made in conditions of around 40% occupancy at the start to over 70% occupancy by the end. We were advised that conditions were normal and representative and that it is not the sort of place that ever gets rowdy. The sound system is background music only, and is at a fixed level which does not change as the evening progresses. Indeed, the system was inspected and appeared to be designed only for background music with small loudspeakers located in corner positions.

5.0 RESULTS AND DISCUSSIONS

5.1 Internal Noise Levels

Basic results were are shown graphically as follows:-



Full Details are Shown in Appendix 2. A Summary is as follows:-

40 to 50 % Occupancy	*Index*	***dB(A)***
Log Average	Leq	**75**
	Lmax	**85**
	L90	**67**
Highest 1 Minute Period	Leq	**78**
	Lmax	**83**
	L90	**64**

55 to 70 % Occupancy	*Index*	***dB(A)***
Log Average	Leq	**73**
	Lmax	**86**
	L90	**66**
Highest 1 Minute Period	Leq	**78**
	Lmax	**93**
	L90	**68**

> 70 % Occupancy	*Index*	***dB(A)***
Log Average	Leq	**74**
	Lmax	**85**
	L90	**68**
Highest 1 Minute Period	Leq	**76**
	Lmax	**86**
	L90	**70**

We can see that these levels are nowhere near the boisterous bar levels assumed in the report, which are reproduced below for reference:-

Boisterous Bar Levels	*Index*	***dB(A)***
Internal	Leq	**86**
	Lmax	**101**

A general inspection confirmed that windows, doors, etc. were in good condition and well fitted. We understand that original ground floor bar is currently not in use.

5.2 External Noise Levels

To the front, the area constantly bustles with people and there is no perceptible noise from within the venue. This of course makes sense with the branding as a "Secret Bar". The noise impact is essentially zero. There is no outside drinking and the impact of a few smokers is likely to be negligible.

To the rear, the alley was noisy with mechanical equipment not associated with the Washhouse, as it has always been since our very first assessment. Measured levels were very steady around the figures shown below (full details in Appendix 2). Without the bustle of people and traffic, it is a lot quieter than the front but there was still no perceptible impact from within.

Rear Alley	*Index*	***dB(A)***
Log Average	Leq	**59**
	Lmax	**68**
	L90	**57**

6.0 PROPOSED SECOND FLOOR BAR

ADC was asked to assess the proposed new bar at the second floor level, by reasonable inference from the existing first floor operation.

The proposed bar appears to be more or less identical in design and purpose. Doors, windows, etc. are in good condition and well fitted. The sound system is the same as the first floor bar and set up for background music only. We understand that the shell construction is identical to lower floors, as one would naturally expect. There are no floors above it.

There is no reason why the same initial assumptions of the original reports cannot be applied here. However, it will of course have the same "Secret Bar" branding and nature and more or less identical to the first floor in all respects.

Again, the impact can be expected to be essentially zero.

7.0 CONCLUSIONS/RECOMMENDATIONS

Internally, we can confirm that all windows, doors, etc. are in good condition and well fitted. The sound system is simply a set of small speakers to provide background music which runs at a set level and does not change. There general noise is from the making of the cocktails behind the bar and customers' voices. It is not at all boisterous, but even if it was, it is inconceivable that there would be any significant impact.

The proposed second floor bar appears to be more or less identical in design and purpose and doors, windows, etc. are in good condition well fitted. The sound system is the same as the first floor bar. We understand that the shell construction is identical to lower floors, as one

would naturally expect. There are no floors above it. Again, the impact can be expected to be essentially zero.

We can very confidently conclude that Condition 3 is met by some margin.

We can also conclude that the proposed second floor bar can be expected to have the same negligible impact.

Appendix 1

Definition of Acoustic Terms

The Decibel

The decibel is the basic unit of noise measurement and is denoted dB. Technically, it is a means of expressing the difference in noise level between the measured noise and a standard level of noise. Most often the threshold of human hearing is used as the standard reference but is really should be stated. The threshold of human hearing is a sound pressure of 20µPa or a sound power of 1pW.

A sound pressure level or SPL should be expressed in dB(re. 20µPa). A sound power level or SWL should be expressed in dB(re. 1pW). If the reference levels are omitted, it will often (but not always) be safe to assume that they are referenced to the threshold of human hearing.

A-Weighting and dB(A)

The human hearing system responds differently to different frequencies. The A-weighting system takes account of this by emphasising mid and high frequencies more than low frequencies to given an overall level. An A-Weighted noise level, therefore, reflects the way normal, healthy hearing would perceive the overall level of the noise. The basic unit is dB(A), although other systems of expressing an A-weighted level are discussed below.

Other weighting systems, such as C-Weighting, denoted dB(C), reflect the human hearing system's response at higher noise levels.

Equivalent Continuous Sound Level, L_{eq}

This is a kind of mean noise level.

The unit is dB L_{eq}. For A-weighted levels the unit is dB(A) L_{eq} or, in more modern units, dB L_{Aeq}. The Noise at Work Regulations use $L_{eq(s)}$ which refers to a sample level.

Maximum Level, L_{max}

This is the maximum level reached (usually for a fraction of a second) in the measurement period.

The unit is dB L_{max}. For A-weighted levels the unit is dB(A) L_{max} or, in more modern units, dB L_{Amax}.

Statistical (Percentile) Levels, L_n

During a measurement of fluctuating noise, it is often useful to establish the levels exceed for a percentage of the time. L_n is the index representing the level exceeded for n% of the measurement period.

The unit is dB L_n. For A-weighted levels, the unit is dB(A) L_n or, in more modern units, dB L_{An}.

Common examples are as follows :-

dB L_{A90} is the A-weighted level exceeded for 90% of the time and is often used to describe the underlying background noise.

dB L_{A50} is the A-weighted level exceed for 50% of the time. Mathematically, it is the median, another kind of average.

dB L_{A10} is the A-weighted level exceeded for 10% of the time and has traditionally been used to describe the intermittent highs in the noise climate such as passing cars or aircraft.

Frequency Analysis

Here the audible frequency range is divided up into bands and the noise level is expressed in each frequency band form low pitches to high pitches.

Octave Band analysis is where the frequency range is divided into 8 bands from 63 Hz to 8kHz, or sometimes into 10 bands from 31.5 Hz to 16kHz.

1/3 Octave Band analysis provides more detailed subdivision into 24 bands from 50 Hz to 10kHz, or sometimes into 30 bands from 20Hz to 20kHz.

Narrow Band analysis takes this further with the possibility of many thousands of bands, possibly only 1Hz wide, or even less.

In all types of frequency analysis, the level in each band can be expressed in terms of L_{eq}, L_{max}, L_n, etc. as defined above.

Appendix 2

Measurements in Full

First Floor Bar

40 to 70 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
15:55	Leq	**74**	68	79	72	71	70	66	60	53
	Lmax	**86**	73	85	80	81	84	76	70	60
	L90	**69**	64	73	67	67	63	60	53	46
15:56	Leq	**75**	67	78	74	73	71	67	60	54
	Lmax	**85**	73	87	81	82	83	76	69	65
	L90	**70**	49	54	66	68	66	62	54	45
15:57	Leq	**76**	71	82	81	71	69	66	59	55
	Lmax	**89**	83	90	89	81	86	80	70	69
	L90	**70**	52	67	76	66	62	60	53	45
15:58	Leq	**71**	70	75	71	69	65	62	59	57
	Lmax	**87**	77	87	83	89	79	74	67	67
	L90	**63**	63	66	60	61	58	54	51	48
15:59	Leq	**72**	72	75	73	71	66	63	60	57
	Lmax	**84**	80	83	81	83	78	74	68	67
	L90	**65**	50	62	65	64	59	56	52	46
16:00	Leq	**77**	76	78	76	73	72	68	64	62
	Lmax	**87**	80	84	82	80	84	80	70	69
	L90	**71**	72	74	73	68	64	62	60	57
16:01	Leq	**75**	75	77	75	72	70	67	65	62
	Lmax	**87**	80	83	82	82	83	81	73	71
	L90	**69**	64	69	69	66	63	60	59	56
16:02	Leq	**70**	67	75	72	67	63	59	55	54
	Lmax	**79**	74	82	80	78	73	70	64	62
	L90	**62**	60	67	62	60	56	51	48	40
16:03	Leq	**76**	70	77	78	73	71	66	62	56
	Lmax	**88**	76	88	87	85	84	77	76	73
	L90	**70**	61	71	75	67	63	58	53	43
16:04	Leq	**78**	70	76	78	75	73	69	65	58
	Lmax	**89**	79	86	88	84	87	80	77	72
	L90	**70**	55	68	71	67	65	60	57	50
16:05	Leq	**75**	73	74	78	72	69	66	61	58
	Lmax	**85**	82	87	86	83	79	74	69	69
	L90	**67**	54	63	70	64	62	57	51	41
16:06	Leq	**76**	73	75	77	73	70	68	64	60
	Lmax	**86**	82	87	87	82	80	76	75	75
	L90	**69**	66	68	71	66	64	60	56	51
16:07	Leq	**76**	70	72	75	73	71	68	63	58
	Lmax	**89**	78	83	81	86	85	81	76	71
	L90	**69**	64	66	70	66	64	61	57	52
16:08	Leq	**72**	66	71	73	68	67	62	58	54
	Lmax	**82**	73	79	79	75	79	73	68	65
	L90	**64**	55	66	67	63	59	54	47	39
16:09	Leq	**69**	59	71	71	65	64	60	56	50
	Lmax	**78**	70	78	79	74	72	71	68	63
	L90	**62**	48	53	66	61	56	52	48	40
16:10	Leq	**69**	68	64	66	65	64	61	58	54
	Lmax	**81**	75	73	76	75	76	73	73	73
	L90	**60**	53	54	59	58	55	53	48	41
16:11	Leq	**73**	67	67	70	70	69	65	59	54
	Lmax	**77**	71	72	75	76	73	68	65	62
	L90	**69**	65	65	66	67	64	63	56	45

55 to 70 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
16:20	Leq	**71**	71	69	72	67	66	63	57	51
	Lmax	**83**	77	76	81	81	76	78	71	60
	L90	**65**	66	63	66	62	60	56	51	44
16:21	Leq	**71**	69	66	72	68	66	62	58	52
	Lmax	**82**	76	76	81	76	75	70	77	70
	L90	**63**	54	58	65	61	58	54	48	40
16:22	Leq	**70**	70	70	71	67	64	60	55	52
	Lmax	**79**	77	80	78	78	74	72	66	62
	L90	**64**	60	62	66	62	58	55	49	43
16:23	Leq	**70**	71	69	72	66	65	62	57	54
	Lmax	**80**	75	76	80	75	75	73	69	64
	L90	**65**	66	64	68	62	59	56	52	49
16:24	Leq	**69**	71	68	70	66	64	61	60	55
	Lmax	**83**	75	76	77	74	74	74	80	71
	L90	**65**	68	64	66	61	60	56	52	49
16:25	Leq	**69**	71	69	68	66	64	61	56	54
	Lmax	**81**	79	80	76	79	76	71	69	65
	L90	**61**	66	63	62	59	55	52	47	41
16:26	Leq	**72**	69	70	67	67	67	64	62	61
	Lmax	**85**	75	76	76	80	80	77	77	72
	L90	**64**	49	63	62	60	59	55	54	57
16:27	Leq	**72**	69	70	69	68	69	62	58	59
	Lmax	**81**	74	77	81	77	76	73	68	67
	L90	**69**	51	65	64	65	66	56	54	56
16:28	Leq	**74**	64	69	73	71	71	63	58	57
	Lmax	**85**	73	76	81	83	83	73	67	64
	L90	**67**	49	63	67	64	62	57	54	48
16:29	Leq	**73**	70	71	71	69	69	65	61	60
	Lmax	**88**	76	77	83	80	81	84	81	73
	L90	**66**	62	59	66	63	61	55	54	57
16:30	Leq	**73**	58	61	68	69	69	64	60	60
	Lmax	**89**	72	71	80	80	89	71	69	64
	L90	**65**	47	54	61	62	61	56	55	57
16:31	Leq	**73**	67	68	69	70	70	64	61	61
	Lmax	**82**	74	76	77	76	79	73	69	66
	L90	**70**	54	56	63	67	67	58	56	57
16:32	Leq	**73**	70	71	71	70	69	65	60	61
	Lmax	**86**	74	79	79	77	78	84	75	65
	L90	**69**	65	66	66	66	66	56	56	57
16:33	Leq	**74**	70	71	69	69	69	68	65	62
	Lmax	**85**	76	77	80	80	79	79	75	72
	L90	**66**	65	65	63	61	61	58	56	58
16:34	Leq	**71**	65	66	69	69	66	63	59	54
	Lmax	**85**	75	75	83	86	76	74	70	66
	L90	**63**	54	57	60	60	59	55	52	46
16:35	Leq	**73**	70	70	72	70	68	64	59	54
	Lmax	**85**	76	78	82	85	77	75	69	65
	L90	**66**	57	64	66	64	61	57	54	50
16:36	Leq	**74**	66	69	73	73	70	65	60	57
	Lmax	**87**	75	78	84	83	84	77	73	70
	L90	**68**	49	61	67	67	62	57	55	52
16:37	Leq	**75**	68	72	73	74	69	66	62	58
	Lmax	**92**	81	82	85	94	78	83	74	70
	L90	**68**	57	66	68	65	62	58	56	53
16:38	Leq	**71**	68	74	71	69	66	62	58	54
	Lmax	**82**	74	82	80	78	79	74	68	62
	L90	**64**	64	66	63	62	60	55	53	49

55 to 70 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
16:39	Leq	**70**	62	68	66	67	64	63	57	54
	Lmax	**85**	78	75	75	83	79	80	70	67
	L90	**62**	53	61	62	60	56	53	48	44
16:40	Leq	**75**	72	70	71	71	70	68	61	56
	Lmax	**86**	80	78	85	82	81	81	73	67
	L90	**67**	56	64	65	65	63	60	55	52
16:41	Leq	**75**	74	70	72	72	70	69	62	56
	Lmax	**89**	79	76	80	89	81	84	74	63
	L90	**67**	70	67	68	63	61	59	55	52
16:42	Leq	**69**	70	68	68	65	64	62	57	54
	Lmax	**81**	76	75	75	76	73	76	69	66
	L90	**64**	52	58	63	59	59	56	52	49
16:43	Leq	**72**	73	70	71	67	68	65	61	57
	Lmax	**85**	82	76	78	77	81	75	79	74
	L90	**67**	70	67	68	61	61	59	55	53
16:44	Leq	**73**	72	70	70	70	68	65	60	55
	Lmax	**87**	78	75	78	84	83	80	74	65
	L90	**63**	53	62	65	60	55	53	52	52
16:45	Leq	**69**	66	70	72	65	64	60	56	52
	Lmax	**80**	74	79	81	77	75	72	69	62
	L90	**62**	52	60	63	59	56	53	50	44
16:46	Leq	**71**	68	73	71	68	66	62	57	52
	Lmax	**82**	81	80	78	81	77	74	71	62
	L90	**65**	64	68	66	62	58	56	52	46
16:47	Leq	**72**	69	73	73	69	67	63	58	53
	Lmax	**82**	74	78	80	76	79	73	70	65
	L90	**66**	64	69	67	63	61	57	53	48
16:48	Leq	**71**	68	73	70	69	66	63	57	52
	Lmax	**83**	76	80	77	83	79	73	66	61
	L90	**64**	64	68	64	63	59	56	52	46
16:49	Leq	**72**	70	71	69	69	67	65	61	55
	Lmax	**85**	75	78	81	85	78	76	74	71
	L90	**64**	55	64	62	61	59	55	50	44
16:50	Leq	**73**	70	71	71	73	67	64	60	56
	Lmax	**86**	76	78	79	88	79	73	69	66
	L90	**66**	53	58	63	64	61	59	55	52
16:51	Leq	**75**	72	72	75	72	69	66	63	58
	Lmax	**84**	77	79	83	80	80	75	73	74
	L90	**70**	67	67	70	67	63	62	59	55
16:52	Leq	**74**	72	72	74	70	69	65	61	57
	Lmax	**84**	79	80	81	80	81	74	70	64
	L90	**68**	67	66	69	65	62	59	56	53
16:53	Leq	**71**	58	62	69	70	66	63	57	51
	Lmax	**83**	70	73	77	82	80	74	67	61
	L90	**64**	48	51	62	62	59	56	51	43
16:54	Leq	**78**	70	70	73	76	73	70	64	58
	Lmax	**93**	78	80	83	90	90	84	78	69
	L90	**68**	53	58	65	65	63	60	55	51
16:55	Leq	**74**	72	73	73	72	68	65	61	59
	Lmax	**84**	78	80	80	84	78	75	70	66
	L90	**68**	68	68	69	65	61	59	58	55
16:56	Leq	**73**	72	72	70	69	69	65	60	57
	Lmax	**83**	82	79	76	77	79	77	70	66
	L90	**65**	66	66	65	62	60	57	55	52
16:57	Leq	**72**	69	71	69	69	68	64	59	57
	Lmax	**83**	75	77	76	78	81	74	67	62
	L90	**65**	60	61	63	62	61	58	55	52

> 70 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
16:58	Leq	**74**	68	70	69	71	70	67	61	57
	Lmax	**84**	75	77	78	80	79	79	69	63
	L90	**68**	51	58	63	67	64	61	56	50
16:59	Leq	**76**	69	71	70	72	72	69	63	59
	Lmax	**85**	75	77	79	80	82	79	72	70
	L90	**71**	55	63	65	67	67	64	59	53
17:00	Leq	**75**	68	70	70	73	71	68	62	57
	Lmax	**84**	81	77	80	83	79	77	72	68
	L90	**69**	49	58	63	67	64	62	57	47
17:01	Leq	**75**	55	68	70	73	70	68	63	57
	Lmax	**85**	65	79	79	84	80	77	68	67
	L90	**69**	47	57	63	66	64	63	58	52
17:02	Leq	**75**	67	72	71	73	71	68	62	57
	Lmax	**85**	73	78	81	85	80	77	70	69
	L90	**69**	52	62	67	67	64	63	58	52
17:03	Leq	**76**	67	72	71	73	72	69	63	58
	Lmax	**86**	72	79	79	84	82	78	71	67
	L90	**70**	55	67	67	67	65	64	58	52
17:04	Leq	**75**	68	71	71	73	71	68	63	58
	Lmax	**86**	80	78	81	81	84	76	73	68
	L90	**70**	56	61	66	67	65	63	59	52
17:05	Leq	**76**	71	73	72	73	71	69	64	58
	Lmax	**84**	76	79	77	82	81	75	70	71
	L90	**71**	66	70	69	68	66	64	59	54
17:06	Leq	**75**	70	73	71	71	70	68	64	59
	Lmax	**85**	80	79	83	81	78	78	77	72
	L90	**68**	64	67	65	64	63	62	57	53
17:07	Leq	**70**	68	69	66	68	65	63	58	54
	Lmax	**81**	75	77	78	78	77	72	69	66
	L90	**63**	57	60	61	61	58	56	51	46
17:08	Leq	**71**	71	70	67	69	66	63	58	55
	Lmax	**81**	76	76	76	78	77	73	70	62
	L90	**66**	68	65	61	64	61	57	53	51
17:09	Leq	**75**	67	68	71	72	70	67	62	56
	Lmax	**84**	76	77	82	81	79	77	71	65
	L90	**70**	57	60	66	68	65	62	56	48
17:10	Leq	**74**	64	66	72	72	70	67	61	58
	Lmax	**87**	73	76	81	88	82	75	69	66
	L90	**69**	57	59	64	67	65	62	58	51
17:11	Leq	**74**	70	69	68	71	69	67	62	59
	Lmax	**86**	76	77	78	83	82	77	74	74
	L90	**68**	67	65	63	66	63	61	57	55
17:12	Leq	**72**	67	68	68	70	68	65	59	55
	Lmax	**84**	74	76	76	83	79	77	68	63
	L90	**65**	52	58	61	64	60	57	52	45
17:13	Leq	**71**	68	68	68	69	67	64	58	52
	Lmax	**83**	76	76	78	78	79	77	67	71
	L90	**64**	50	58	61	63	59	56	51	41
17:14	Leq	**73**	72	73	72	71	69	65	58	54
	Lmax	**87**	76	77	79	81	85	77	66	64
	L90	**67**	70	69	67	64	61	58	53	50
17:15	Leq	**73**	71	72	70	70	69	65	59	54
	Lmax	**87**	76	76	79	80	86	76	70	63
	L90	**66**	67	66	66	64	61	57	53	46
17:16	Leq	**73**	71	71	71	70	69	65	59	56
	Lmax	**84**	76	84	87	78	79	76	72	74
	L90	**67**	53	56	62	65	63	58	53	45
17:17	Leq	**73**	71	72	69	70	68	65	61	55
	Lmax	**83**	81	78	76	79	81	73	69	65
	L90	**65**	63	66	64	63	59	55	52	47
17:18	Leq	**72**	68	74	69	68	67	64	58	52
	Lmax	**86**	81	81	77	80	84	79	71	65
	L90	**64**	63	67	63	62	59	56	52	47
17:19	Leq	**71**	67	75	70	69	66	63	59	53
	Lmax	**83**	74	82	75	78	76	73	78	68
	L90	**66**	63	69	66	64	61	57	53	48
17:20	Leq	**73**	68	75	70	71	68	65	60	55
	Lmax	**83**	76	80	79	83	77	74	71	65
	L90	**68**	62	68	65	66	63	60	55	49

First Floor Bar Summaries

40 to 50 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Log Average	Leq	**75**	71	76	76	71	69	66	61	57
	Lmax	**85**	77	79	80	82	81	76	72	69
	L90	**67**	64	66	65	65	63	60	55	50
Highest 1 Minute Period	Leq	**78**	70	76	78	75	73	69	65	58
	Lmax	**83**	76	76	78	78	79	77	67	71
	L90	**64**	50	58	61	63	59	56	51	41

55 to 70 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Log Average	Leq	**73**	70	70	71	70	68	65	60	57
	Lmax	**86**	77	78	80	84	81	78	74	68
	L90	**66**	63	64	66	63	61	57	54	52
Highest 1 Minute Period	Leq	**78**	70	70	73	76	73	70	64	58
	Lmax	**93**	78	80	83	90	90	84	78	69
	L90	**68**	53	58	65	65	63	60	55	51

> 70 % Occupancy	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Log Average	Leq	**74**	69	71	70	71	69	66	61	56
	Lmax	**85**	77	79	80	82	81	76	72	69
	L90	**68**	63	65	65	66	63	61	56	50
Highest 1 Minute Period	Leq	**76**	67	72	71	73	72	69	63	58
	Lmax	**86**	72	79	79	84	82	78	71	67
	L90	**70**	55	67	67	67	65	64	58	52

Rear Alley

Rear Alley	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
17:30	Leq	**58**	63	59	61	55	52	47	43	35
	Lmax	**72**	67	70	69	72	66	63	56	51
	L90	**56**	61	58	59	52	50	45	41	32
17:35	Leq	**59**	65	60	64	54	53	48	43	35
	Lmax	**64**	71	66	69	61	56	56	53	44
	L90	**58**	63	59	63	53	52	46	42	33
17:40	Leq	**59**	65	61	62	55	54	50	46	39
	Lmax	**71**	72	68	69	65	64	64	63	58
	L90	**57**	62	59	58	54	51	47	42	32
17:45	Leq	**59**	63	61	60	56	55	50	44	37
	Lmax	**68**	67	66	63	65	63	62	50	49
	L90	**58**	61	60	59	55	53	48	42	33
17:50	Leq	**58**	64	60	59	55	53	48	44	35
	Lmax	**65**	72	67	65	64	60	55	52	39
	L90	**56**	61	58	58	54	52	46	42	34
17:55	Leq	**57**	62	59	59	54	51	46	43	34
	Lmax	**58**	63	61	60	55	52	46	43	35
	L90	**56**	60	57	58	53	50	46	42	34

Rear Alley	*Index*	***dB(A)***	*63*	*125*	*250*	*500*	*1k*	*2k*	*4k*	*8k*
Log Average	Leq	**59**	64	60	61	55	53	49	44	36
	Lmax	**68**	70	67	67	66	62	60	57	51
	L90	**57**	61	59	59	53	52	46	42	33