FACSIMILE MESSAGE

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To	Alan Bennett
Company	Oakglade Property Management
Fax No	0161 256 0099
From	Peter Jackson
Date	24 April 2007
Our Ref	PJ2169/PJ/22272
Your Ref	
Page	1 of 1

NOISE ASSESSMENT FOR PROPERTY DEVELOPMENT AT 119 OLDHAM STREET, MANCHESTER

I refer to our recent conversation concerning the noise assessment completed in August 2002, in conjunction with the application for change of use to residential premises at 119 Oldham Street, Manchester.

I understand that you are now applying for a second apartment to be incorporated into this development, under Planning Application 081289

I can confirm that the sound insulation requirements, as set out in my report dated August 2002, and which have already been incorporated into the development, are still applicable for this second apartment.

If you need anything further, please do not hesitate to contact me.

Regards

Peter Jackson
Principal Consultant

Distribution

Name	Company	Fax No
Phil Bakes		

SPECTRUM ACOUSTIC CONSULTANTS LTD THE STANDISH CENTRE CROSS STREET STANDISH WIGAN WN6 0HQ UK
TEL +44 (0)1257 473242 FAX +44 (0)1257 473243 OTHER OFFICES. TEL +44 (0)1767 318871 (HEAD OFFICE)
TEL +44 (0)20 7619 7410 (LONDON) e-mail spectrum@spectrumacoustic.com

Spectrum
ACOUSTIC CONSULTANTS

Noise Assessment for proposed residential development of 119 Oldham Street, Manchester

Report Ref
W2717/PJ/22272

Issued To
Oakglade Property Management

Issued By
Peter Jackson MSc MIOA
Principal Consultant

Date
August 2002

SECTION	TITLE	PAGE
1.	INTRODUCTION	1
2.	SITE NOISE SURVEY	1
2.1	SITE DESCRIPTION	1
2.2	SURVEY DATES	1
2.3	MEASUREMENT PROCEDURE	1
2.4	MEASUREMENT RESULTS AND OBSERVATIONS	2
3.	ASSESSMENT CRITERIA	5
3.1	PLANNING POLICY GUIDANCE 24: PLANNING AND NOISE	5
3.2	BS8233: 1999 AND WHO GUIDELINES FOR COMMUNITY NOISE	6
4.	DISCUSSIONS	6
4.1	PLANNING POLICY GUIDANCE 24: PLANNING AND NOISE	6
4.2	PROPOSED MITIGATING MEASURES	6
4.3	SUMMARY	7

Appendix A: Full listing of noise measurement data

1. INTRODUCTION

Oakglade Property Management have commissioned Spectrum Acoustic Consultants to complete a noise assessment for the proposed re-development of a currently vacant building at 119 Oldham Street, Manchester. The proposal involves converting the vacant building for use as a residential apartment.

This report details the results of the noise measurements completed at 119 Oldham Street, together with observations made during the noise assessment survey. A comparison is made between the noise survey results and the recommended noise exposure categories provided in PPG 24 "Planning and Noise". As necessary, the report provides details of the sound insulation to be included in the design of the residential accommodation, to reduce external noise levels to a reasonable internal standard.

The assessment report is intended to provide the necessary information on noise impact, to supplement the planning application for the proposed development.

2. SITE NOISE SURVEY

2.1 SITE DESCRIPTION

The development building is situated on Oldham Street, which is in the northern commercial sector of the City of Manchester, off Piccadilly. The rear of the building overlooks a narrow alleyway and the rear of buildings on Tib Street and consequently this aspect has no particular sensitivity from noise. The location of the premises, showing the noise measurement location is included as Figure 1, included after section 2 of the report.

The development building is situated in a busy public area of city centre Manchester and accordingly the noise climate along Oldham Street is dominated by street noise from the general public, and transportation noise.

2.2 SURVEY DATES

The noise measurement survey was completed over the period 26-31 July 2002, with the survey including both weekday and weekend periods.

The following instrumentation was used to measure noise levels during the survey:

- Bruel & Kjaer Type 2260 Sound Level Meter
- Bruel & Kjaer Type 4189 ½" Microphone
- Bruel & Kjaer Type 4230 Acoustic Calibrator

The sound level meter, calibrator and microphone are calibrated annually using equipment referenced to the British Calibration Service and The National Physical Laboratory.

2.3 MEASUREMENT PROCEDURE

Noise measurements were recorded with the microphone positioned on an extension pole at 1 metre outside the front aspect of the building, at 1st floor level, overlooking Oldham Street. This measurement position is representative of the noise level which would be present outside the residential accommodation windows overlooking the busiest aspect of the site.

Continuous noise measurement samples of 1-hour duration were recorded over the survey period, which included a complete weekend. Noise levels were recorded in terms of LAeq, LA10, LA50, LA90, LAmax, and LAmin, with LAmax measurements being recorded with the meter set on 'slow' response, as required by PPG 24.

2.4 MEASUREMENT RESULTS AND OBSERVATIONS

The complete listing of all the noise measurement data is included in tables A1 to A6 in Appendix A.

Table 1 provides a summary of the important ambient LAeq noise data, taken over the survey periods, outside the Oldham Street aspect of the building. The ambient LAeq data is used to determine the Noise Exposure category of the site.

Time	Friday 26/07/02	Saturday 27/07/02	Sunday 28/07/02	Monday 29/07/02	Tuesday 30/07/02	Wednesday 31/07/02
2300		66.0	68.2	63.9	69.7	65
0000		65.2	68.2	64.1	62	63.2
0100		62.1	64.1	58.8	59.4	59.2
0200		63.5	65.8	55.8	59.3	59.8
0300		60.2	60.9	54.7	66.8	62.7
0400		58.0	59.1	56.3	57.1	56.8
0500		63.4	68.6	61.7	61.5	62.7
0600		66.2	66.8	66	65.9	69.2
Night time Mean		**63.8**	**66.2**	**61.9**	**66.6**	**63.9**
0700	72.1	70.2	63.7	71	71.5	
0800	72.5	72	70.8	71.9	72.1	
0900	71.1	72.1	66.6	70.2	71.1	
1000	70.9	70	67.9	70.5	70.9	
1100	71.2	70.2	67.1	71.7	71.4	
1200	72.1	70.9	67.4	70.3	73.2	
1300	71	70.8	70.3	70.1	71.5	
1400	71.2	71.2	66.1	70.1	70.5	
1500	70.2	70.1	67.3	71.1	70.2	
1600	71.9	70.7	66	73.4	71.8	
1700	72.3	72.7	66.2	71.6	72.7	
1800	67.7	68.4	66.2	69.8	68.4	
1900	67.2	67.5	65.5	67.4	66.1	
2000	66.5	68.5	66	71.4	66.5	
2100	66.7	68.2	65.3	67.3	65.2	
2200	66.2	68.3	66.1	67.2	66.2	
Daytime Mean	**70.6**	**70.4**	**67.2**	**70.6**	**70.6**	

Table 1: Measured LAeq (I hour) data from Oldham Street

Note: The dates indicated show the date of all the measurements except for those taken over 23.30 – 00.00. This hourly period actually falls on the preceding date.

The noise level criteria values given in the PPG 24 NEC table are free-field levels, and consequently noise measurements need to be recorded on an open site. When this is not practicable, i.e. if the site has existing developed buildings, a correction of -3dB(A) is required in the procedures to adjust measurements taken at building facades, to reflect the free-field condition.

Table 2 shows the average LAeq noise level taken over the daytime and night time periods, with the necessary –3dB(A) adjustments to account for the free field correction.

Time	Mean LAeq (dB)	
	Weekday	Weekend
0700-2300	68	66
2300-0700	61	62

Table 2: Mean 'free field' LAeq noise levels for daytime and night-time periods (to nearest dB).

Being a city centre location the results show that there is no significant variation to daytime or night time ambient noise between the weekday and weekend periods, although the Sunday daytime noise levels were around 3 dB(A) lower than for the weekday and Saturday periods. This was probably due to a reduction in road traffic along Oldham Street on Sunday.

The noise data shows that average 'free field' noise levels outside the Oldham Street façade of the property are in the range LAeq 66-68dB(A) daytime and 61-62dB(A) night time.

The LAmax data is reported in Appendix A tables. As indicated, when corrected by -3dB(A) to adjust to the free field condition, there are several occasions per night when noise levels exceed the PPG 24 82 dB LAmax criteria.

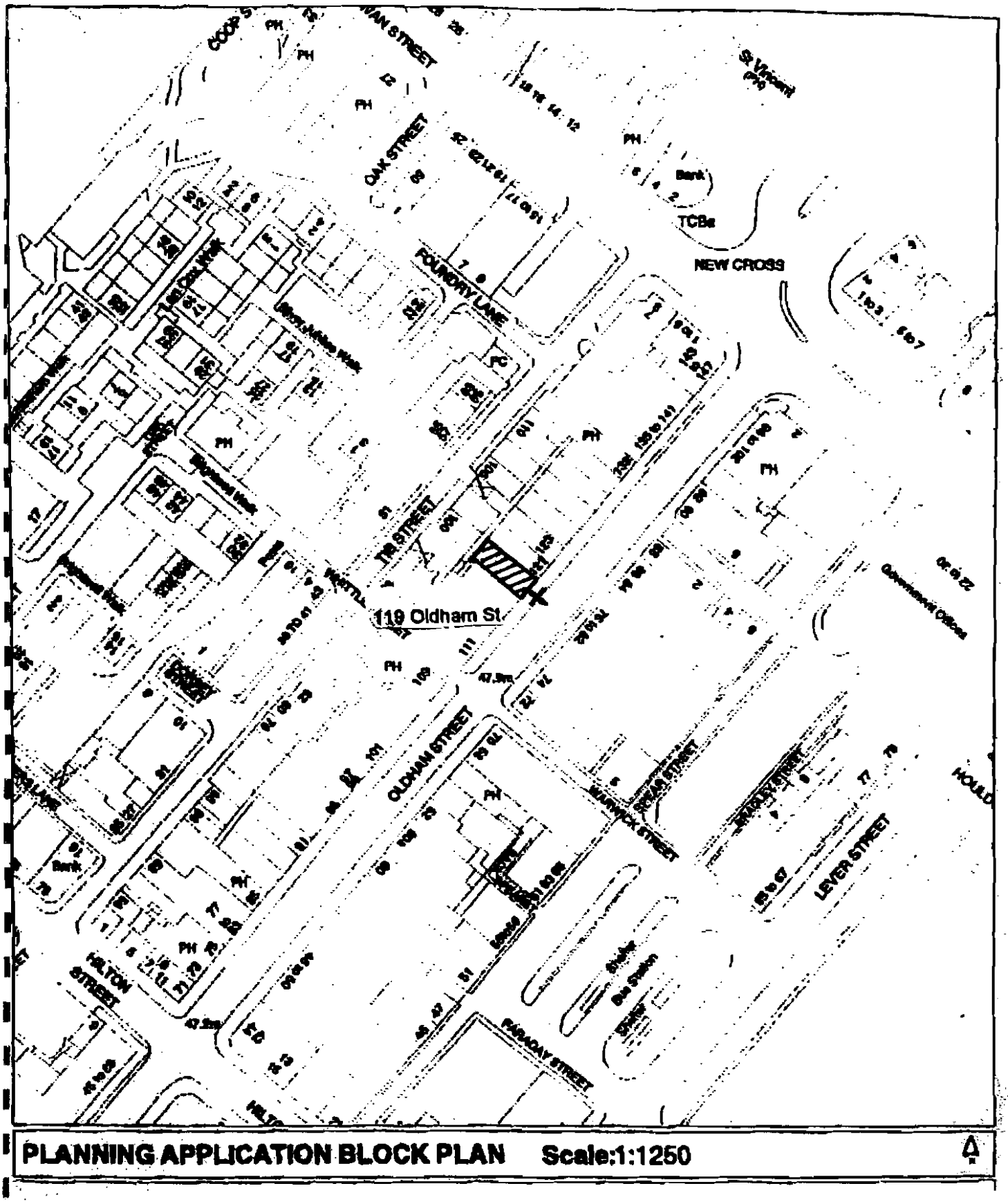

Figure 1: Plan showing Oldham Street, and Noise Monitoring Position

3. ASSESSMENT CRITERIA

3.1 PLANNING POLICY GUIDANCE 24: PLANNING AND NOISE

Planning Policy Guidance: Planning and Noise (PPG 24) provides a mechanism for determining whether noise should be a major factor when granting or refusing planning permission for a residential development.

For development sites where transportation noise dominates, the assessment method uses the concept of Noise Exposure Categories (NEC's) to rate the importance of noise in the planning process. It is therefore appropriate to use the Noise Exposure Categories to assess noise levels for this development.

There are four NEC's into which a site may be classified and these are included in Annex 1 of PPG 24. A summary of the guidance given for each category is shown in Table 3.

NEC	Description
A	Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.
B	Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.
C	Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
D	Planning permission should normally be refused.

Table 3: Description of NEC's

The NEC's are defined in terms of the following noise level ranges, for each source category.

Noise Levels Corresponding To The Noise Exposure Categories For New Dwellings LAeq,T dB					
Noise Source		Noise Exposure Category A	B	C	D
Road traffic:	0700-2300	<55	55-63	63-72	>72
	2300-0700	<45	45-57	57-66	>66
Rail traffic:	0700-2300	<55	55-66	66-74	>74
	2300-0700	<45	45-59	59-66	>66
Air traffic:	0700-2300	<57	57-66	66-72	>72
	2300-0700	<48	48-57	57-66	>66
Mixed sources:	0700-2300	<55	55-63	63-72	>72
	2300-0700	<45	45-57	57-66	>66

Table 4: Noise level ranges for each NEC

Furthermore, where individual night-time noise events regularly exceed 82 dB(A) Ls,max, the site should be classified as NEC C.

3.2 BS8233: 1999 AND WHO GUIDELINES FOR COMMUNITY NOISE

For assessing the viability of development land and in particular town centre buildings or brown field sites, where mitigating features may be considered for protecting the amenity of occupiers from external noise levels, Planning Authorities are commonly giving consideration to recommended absolute indoor noise criteria guidelines, as defined in BS8233: 1999 'Code of practice for Sound Insulation and Noise Reduction in Buildings' and also the World Health Organisation's Guidelines for Community noise.

Both these guidelines make recommendations for absolute noise targets for inside properties, indicating that a 'good' standard for reasonable resting and sleeping conditions inside bedrooms and living rooms requires an indoor ambient level of L_{Aeq} 30 dB(A). A 'reasonable' standard is noted as being 35 dB(A) according to BS8233.

According to these guidelines, these desirable targets may be transposed to 40 dB(A)/45 dB(A) outside the building, by giving consideration that a partially open window will reduce noise levels to the room by approximately 10 dB(A).

4. DISCUSSIONS

4.1 PLANNING POLICY GUIDANCE 24: PLANNING AND NOISE

The Noise Exposure Categories shown in Tables 3 and 4, assess the impact of noise on a site in terms of daytime $L_{Aeq(16hours)}$: (0700-2300) and night-time $L_{Aeq(8\ hours)}$: (2300-0700).

There is generally a mix of noise sources in this area of Manchester, with significant contributors including road traffic noise and general public noise. However, the dominating feature to the noise is from road traffic and it is therefore appropriate to use the 'road traffic' NEC's. The measured mean daytime and night-time L_{Aeq} noise levels are compared with the corresponding NEC in Table 5.

Time	Mean L_{Aeq} (dB)		Noise Exposure Category	
	Weekday	Weekend	Weekday	Weekend
0700-2300	68	66	C	C
2300-0700	61	62	C	C

Table 5: Mean L_{Aeq} noise level for daytime and night-time with NEC classification

The noise assessment therefore shows that the front facade of the building, facing Oldham Street, falls into a mid NEC 'C' category. Where the Planning Authority consider the building suitable for residential redevelopment, PPG guidance for such an NEC would be that conditions should be attached to any consent requiring suitable noise insulation measures for mitigating the effects of external noise to occupiers of the building. Such mitigating features are normally agreed with the Planning Authority prior to development works and subsequent occupancy of the building.

4.2 PROPOSED MITIGATING MEASURES

The PPG24 NEC C categorisation for the building indicates that mitigating measures are required to protect the amenity of the residential apartment sections of the building against external noise.

The following mitigating features are proposed for reducing external noise transmission into the qualifying rooms of the residential apartments within the building. 'Qualifying rooms' means sensitive rooms (living rooms or bedrooms) with windows overlooking Oldham Street.

- Provision of acoustic glazing modifications to qualifying room windows. Options include provision of double-glazing with a 6mm glass/12mm air-gap/10mm glass specification, or provision of secondary glazing of 6mm glass and 100mm air-gap, behind existing windows. The secondary glazing specification would include for lining the reveals between the frames with absorptive material. Both these schemes would have a sound insulation rating of at least Rw 38 dB (Rw represents the single figure sound reduction index)
- Provision of an attenuated ventilation scheme to obviate the requirement for windows to be opened for ventilation purposes. The favoured option includes for the provision of attenuated passive, or mechanical, wall mounted ventilation units, to individual rooms, however, a ducted supply option from a common fan inlet may need to be considered where design of the ventilation system needs to be sensitive to external appearance, for instance due to the listed status of a building. Any ventilation system would include for suitable attenuation with a weighted normalised level difference of 30 dB.

These measures will reduce noise levels in sensitive rooms to at least daytime L_{Aeq} 35 dB(A) and night-time L_{Aeq} 30 dB(A). These noise levels are consistent with the recommended guideline values for internal noise, as advised by BS8233: 1999 and the World Health Organisation (WHO) 'Guidelines for Community Noise'.

With respect to the sound insulation specification of the separating floor between the apartment and any ground floor commercial property, this will be designed to meet the Airborne and Impact numerical sound insulation values advised in The Building Regulations Approved Document E, 'Resistance to the passage of sound'.

4.3 SUMMARY

In summary, the development building receives a significant level of noise from a mix of transportation and general public noise sources, and falls into a mid 'C' PPG24 NEC category. However, buildings situated along busy streets in city centre locations are commonly exposed to noise levels in this range. The proposed mitigating features, targeted at improving the noise insulation of the building, will adequately reduce internal noise to acceptable levels for comfort and sleep purposes.

APPENDIX A

Full listing of noise measurement data

Start Time	Noise level Samples dB(A)					
	LA10	LA50	LA90	LAmax	LAmin	LAeq
2300						
0000						
0100						
0200						
0300						
0400						
0500						
0600						
Night time Average						
0700	76	54.4	57.6	86.8	53.6	72.1
0800	76	68.4	58.8	92.4	52.1	72.5
0900	74.6	66	58	89.9	50.5	71.1
1000	74.6	65.6	57.8	86.4	52.3	70.9
1100	74.2	66.4	59	92.8	54.1	71.2
1200	75	65.8	58.4	98.7	52.1	72.1
1300	75.2	66.4	58.8	88.1	52.9	71
1400	75	67	59.4	89.3	53.7	71.2
1500	73.6	65.6	59.8	86.2	55.1	70.2
1600	75.2	68.6	60.6	89.6	53	71.9
1700	74.2	65.8	58.4	98.2	51.7	72.3
1800	71.4	61.8	55	85	48.4	67.7
1900	69.4	60.6	55.4	90.2	50.6	67.2
2000	69.2	60.8	55.6	85.8	49	66.5
2100	70.4	61.8	56.2	82.8	51.1	66.7
2200	69	59.4	50.6	86.2	45.3	66.2
Daytime Average	73.3	64.0	57.5	89.3	51.6	70.6

Table A1: 26 July 02 Noise data overlooking Oldham Street

Start Time	Noise level Samples dB(A)					
	LA10	LA50	LA90	LAmax	LAmin	LAeq
2300						66.0
0000						65.2
0100						62.1
0200						63.5
0300						60.2
0400						58.0
0500						63.4
0600						66.2
Night time Average						61.9
0700	74.5	65.2	55.8	86.9	47.2	70.2
0800	75	67.4	57.8	82.4	52	72
0900	75.6	66.4	58.4	92.5	54.7	72.1
1000	74	64.8	56.8	85	52.6	70
1100	74.2	64.9	56.4	86	50.6	70.2
1200	74.2	64.6	56.6	87	49.6	70.9
1300	74	64.4	56.8	91.2	51	70.8
1400	74.8	63.8	56	89.1	50.5	71.2
1500	73.6	64	57.4	86.3	51.8	70.1
1600	74.4	65.4	59.4	89.2	54	70.7
1700	73.6	64.6	57.6	99.1	50.7	72.7
1800	72	60.8	54.4	85.4	49.6	68.4
1900	70.8	59.4	53.4	85.4	49.5	67.5
2000	71.2	61.4	55	91.6	49.8	68.5
2100	71.2	62.8	58	87.5	53.2	68.2
2200	71.8	63	56.2	83.6	49.7	68.3
Daytime Average	73.4	63.9	56.6	88.0	51.0	70.4

Table A2: 27 July 02 Noise data overlooking Oldham Street

Start Time	Noise level Samples dB(A)					
	LA10	LA50	LA90	LAmax	LAmin	LAeq
2300	71.4	60.2	51.6	85.8	47.4	68.2
0000	70.8	65.4	55.2	84.8	47.4	68.2
0100	67.4	55.6	49.6	83.2	45.9	64.1
0200	68	56.2	49.8	85.8	45.2	65.8
0300	62.8	53.6	47.4	81.7	42.8	60.9
0400	59.6	49	43.4	80	40.3	59.1
0500	61.6	49.4	43.6	93.2	40.9	68.6
0600	66	52	45.2	84.9	41.7	66.8
Night time Average	66.0	55.2	48.2	84.9	44.0	61.9
0700	67.2	56.2	46.6	79	43.6	63.7
0800	74.6	69	50.8	82.9	45.8	70.8
0900	70	58.6	51.4	85.9	45.7	66.6
1000	71.6	61.6	53.2	90	48.1	67.9
1100	70.6	58.2	51.8	83.6	46.9	67.1
1200	71.2	59.4	51.8	85.4	45.9	67.4
1300	74	65.4	54.2	88.4	48.6	70.3
1400	69.6	58	51.8	82.8	47	66.1
1500	70.8	60	53.8	82.8	47	67.3
1600	69.8	58.8	53	80.8	48.7	66
1700	69.8	59.4	54.2	81	49.3	66.2
1800	69.4	59.2	53	85.4	47.3	66.2
1900	68.8	57.6	51.6	83	47.3	65.5
2000	69.2	58	51.6	83	46.6	66
2100	67.8	57	51.2	82.3	46.7	65.3
2200	69	57.6	50.4	82.9	45	66.1
Daytime Average	70.2	59.6	51.9	83.7	46.8	67.2

Table A3: 28 July 02 Noise data overlooking Oldham Street

Start Time	Noise level Samples dB(A)					
	LA10	LA50	LA90	LAmax	LAmin	LAeq
2300	66	58	48.6	82.2	43.2	63.9
0000	68.4	54.8	46.4	81.3	40.3	64.1
0100	60	47.8	41.4	76	36.4	58.8
0200	55	45.2	38.8	77.5	35.2	55.8
0300	54.2	44.6	38.6	79.4	35.2	54.7
0400	55.2	45.2	39.8	77.9	37.2	56.3
0500	61.8	49.2	42.8	82.8	37.3	61.7
0600	69.4	57.2	48.8	89.5	44	66
Night time Average	61.3	50.3	43.2	80.8	38.6	61.9
0700	74.8	65	55.8	88.9	47.4	71
0800	75.4	67.6	58.6	91	54.2	71.9
0900	73.6	65.2	56.8	89.2	49.2	70.2
1000	73.8	64.8	57.6	87.8	50.1	70.5
1100	75	68.2	59.2	88.4	53.3	71.7
1200	73.8	64.8	58	86.7	53.1	70.3
1300	73.4	64.6	58	89.4	52.6	70.1
1400	73.2	64.2	58.4	89.7	54.6	70.1
1500	74.4	67.8	61.4	86.1	55.3	71.1
1600	74.6	67.4	60.8	99.2	56	73.4
1700	74.4	68.2	61.4	89.4	54.1	71.6
1800	73	66	60	91.4	52.8	69.8
1900	69.8	60.2	54.2	89.4	49.7	67.4
2000	71.2	63.2	58	98.5	52.2	71.4
2100	70.8	63.4	57.8	81.2	50.6	67.3
2200	70.4	62.4	57.2	82.4	47.5	67.2
Daytime Average	73.2	65.2	58.3	89.3	52.0	70.6

Table A4: 29 July 02 Noise data overlooking Oldham Street

Start Time	Noise level Samples dB(A)					
	LA10	LA50	LA90	LAmax	LAmin	LAeq
2300	73.6	61	48.4	88.7	40.2	69.7
0000	63.4	50.8	44	85.6	39.7	62
0100	58.8	48.4	41.6	83.7	37.3	59.4
0200	56.4	46	39.2	86.8	35.7	59.3
0300	65.8	49.8	40	88.6	35.3	66.8
0400	56	46.6	39.8	78.7	36.4	57.1
0500	61.6	49.4	42.6	81.9	36.7	61.5
0600	69.6	56.8	48.4	82	42.2	65.9
Night time Average	63.2	51.1	43.0	84.5	37.9	66.6
0700	75.4	64.2	54.4	90.4	46.5	71.5
0800	75.6	66.4	58.4	92.5	54.7	72.1
0900	74.6	65.6	58.2	87.9	50.2	71.1
1000	74	64.8	57.2	88.6	53.1	70.9
1100	74.2	66.4	59	92.8	54.1	71.4
1200	75	65.8	58.4	98.7	52.1	73.2
1300	75.2	66.4	58.8	88.1	52.9	71.5
1400	74	65.8	59	87.1	54.4	70.5
1500	73.8	65.4	58.8	91	54.5	70.2
1600	75	67.4	59.6	91.1	53.3	71.8
1700	76.8	67.8	60	92.2	53.7	72.7
1800	72.2	61.4	54	85.1	49.5	68.4
1900	69.2	58.4	51.2	89.8	47.1	66.1
2000	71	58.8	52.2	86.5	46.7	66.5
2100	67.6	57.8	51	85.2	46.4	65.2
2200	69	59.4	50.6	86.2	45.3	66.2
Daytime Average	73.3	63.9	56.3	89.6	50.9	70.6

Table A5: 30 July 02 Noise data overlooking Oldham Street

Start Time	Noise level Samples dB(A)					
	LA10	LA50	LA90	LAmax	LAmin	LAeq
2300	67.6	56.4	48.2	81.9	43	65
0000	67.4	54.6	45.6	79.2	41	63.2
0100	58.8	48.6	42.8	77.1	39	59.2
0200	56.8	47.2	41.2	81.9	38.8	59.8
0300	60.4	48.8	41.4	85.3	39	62.7
0400	55	38.8	40.6	81.6	38.2	56.8
0500	65.4	53	46	80.9	42.2	62.7
0600	71.8	60.6	53	90.6	48.4	69.2
Night time Average	62.9	51.0	44.9	82.3	41.2	63.9
0700						
0800						
0900						
1000						
1100						
1200						
1300						
1400						
1500						
1600						
1700						
1800						
1900						
2000						
2100						
2200						
Daytime Average						

Table A6: 31 July 02 Noise data overlooking Oldham Street