

NOISE IMPACT ASSESSMENT

**Dixon Hall
Grafton Street
Batley
WF17 6AR**

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1.0 SUMMARY

An environmental noise survey and noise impact assessment have been undertaken to assess the potential noise levels at the proposed development at Dixon Hall , Grafton Street Batley.

An assessment of the existing building internal noise climate due particularly to the stainless steel fabrication workshop and road traffic noise at the junction of Grafton Street and Bradford Road has been undertaken.

The measured internal noise levels have allowed a BS 8233:2014 noise assessment to be carried out.

2.0 BRIEF FOR CONSULTANCY

Peter Ellis MIOA has been commissioned by Unitech Group to undertake a noise impact assessment at Dixon Hall , Grafton Street , Batley. The assessment has been carried out with specific reference to the noise impact on the proposed flats from external noise sources.

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.The report will :

- Evaluate prevailing noise levels at the proposed site.
- Provide design/mitigation measures to reduce the noise levels at the nearest sensitive noise receptor. This is to ensure the amenity of any future residents is protected.

3.0 SITE DESCRIPTION

The site plan for the proposed development appears at the end of this report. The north elevation of Dixon Hall faces Grafton Street. The south elevation faces the Stellex stainless steel fabrication shop at a distance of 45 metres. The shop operates the following hours, Mon-Thurs : 7:30-16:30 hours, Friday 7:30-14:00 hours. ;Closed Sat &Sun.

The east elevation connects to the adjacent storage facility at approximately 35 metres from Bradford Road. The west elevation faces a commercial garage at an approximate distance of 15 metres.

4.0 POLICY AND GUIDANCE

This assessment is primarily based on the following legislation , policy and guidance:

BS 8233:2014::Guidance on sound insulation and noise reduction for buildings.

WHO Guidelines on Community Noise 1999

4.1 BS8233:2014:

The BS8233:2014 "Sound insulation and noise reduction for buildings code of practice gives absolute noise limits for steady state anonymous noise (such as road traffic) inside residential properties. Table 1 outlines these target limits.

8233:2014 Target limits

Activity	Location	07:00 – 23:00	23:00 – 07:00
Resting	Living Rooms	35dBLAeq,16Hour	-
Dining	Dining Room	40dBLAeq,16Hour	-
Sleeping	Bedroom	35dBALeq,16Hour	30dBALeq,8Hour

Table 1

4.2 WHO Guidelines on Community Noise : 1999

The document provides useful criteria , which , together with BS8233:2014 is widely used to assess the effect of nearby sound sources of different types , such as roads , motorways and commercial premises on residential dwellings .In particular , the criterion for noise levels at external spaces.Table2 outlines these target limits.

WHO 1999 Target Limits

Activity

Outdoor Living	Serious annoyance , daytime and evening	55dBLAeq,16hour
	Moderate annoyance , daytime and evening	50dBALeq,16hour
Dwelling Indoors	Speech intelligibility and moderate annoyance Daytime asnd evening	35dBALeq,16hour

Table 2

5.0 ENVIRONMENTAL NOISE SURVEY

In order to characterise the sound profile of the area on the proposed remodelling short term measurements were carried out between 06:00 – 10:00 hours and 23:00 – 01:00 hours on 7th and 8th November 2022.

5.1 Measurement Locations

The short term noise measurements were taken at the location as indicated on the floor plan at the end of the report. The location was chosen because this will be in a habitable room under the proposed remodelling scheme. The microphone was placed 1.2m above room floor level.

5.2 Measurement Equipment

Piece of equipment	Serial No
Norsonic Type : 118 Sound Level Meter	31338
Sound Calibrator	1251

The sound level meter used is a class 1 (precision) meter conforming to BS EN 61672-1.. The sound level meter was calibrated before and after use to confirm there was no significant drift to the meter response

5.3 Weather Conditions

Meteorological conditions were appropriate throughout the measurement periods.

5.3 Results

The following parameters were measured:

LAeq
LA10
LA90
LAmax

The measurement results are presented at the end of the report.

5.5 Subjective Impressions and Context

There were no wide variations in noise levels in any noise measurement period at the the monitoring location .and the robustness of the assessment is deemed appropriate .Approved standards have been used to complete any calculations. Meteorological conditions were appropriate for the measurement of environmental noise. The existing noise

6.0 NOISE MITIGATION

The noise levels within the proposed flats will be dictated by the configuration ,materials and elements of the façade. .The non glazed elements of the façade will contribute significantly to the internal noise levels in the flats in combination with a good quality appropriate glazing specification .

Once the additional work on the building external walls and the window sizes are confirmed the glazing specifications can be confirmed. to ensure the internal noise levels comply with BS : 8233 :2014

The noise assessment was carried out with closed windows. Open windows will not provide adequate ventilation without adverse noise impact. Adequate ventilation needs to be provided in all habitable rooms (Bedrooms& Kitchen/Diner)The ventilation requirements should be based on **the AVO guide** and part F of the building regulations

AVO guide : Acoustics Ventilation and overheating.: Residential Design Guide

7.0 CONCLUSIONS

A noise impact assessment has been undertaken to assess the suitability of remodelling Dixon Hall to create 6 flats. Existing internal noise levels were measured in the positions on the site plan, in proposed habitable rooms. From a sound insulation point of view the location of the bedrooms on the quieter side of Dixon Hall is appropriate.

The proposed refurbishment work to comply with current building regulations will further enhance the sound insulation performance of the building.

The completed flats will be designed to comply with the requirements of BS 8233 : 2014 and that there is a low likelihood of adverse impact on the future occupants of the flats..

Internal Room Noise Measurements – MP!

SurveyPeriod : 22:30 – 01:00 Hours

Measurement Period : 15 Minutes

Time Period	A Weighting				Lz Octave Band Centre Frequency (Hz)							
	LAeq	L10	L90	Lmax	63	125	250	500	1k	2k	4k	8k
23:00 – 23:15	32.5	35.1	27.6	49								
23:15 – 23:30	32.9	34.6	27.9	49.4								
23:30 – 23:45	32.0	33.6	27.9	49.7								
23:45 – 24:00	35.3	36.7	26.6	51.5								
24:00 – 00:15	32.6	36.1	26.8	49.6								
00:15 – 00:30	33.9	33.1	25.4	54.8								
00:30 – 00:45	30.3	32.4	26.3	49.6								
00:45 – 01:00	31.7	33.3	26.1	52.0								

Internal Room Noise Measurements MP1

Survey Period : 06:00 – 10:00 hours

Measurement Period : 15 minutes

Time Period	A Weighting				Leq Octave Band Centre Frequency (Hz)							
	LAeq	L10	L90	Lmax	63	125	250	500	1k	2k	4k	8k
06:00 – 06:15	33.1	34.9	27.0	50.7								
06:15 – 06:30	31.9	34.2	27.2	48.3								
06:30 – 06:45	33.8	36.3	27.2	50.1								
06:45 – 07:00	32.5	35.1	27.6	49.0								
07:00 – 07:15	32.9	34.6	27.9	49.4								
07:15 – 07:30	32.0	33.6	27.6	49.7								
07:30 – 07:45	35.3	36.7	26.6	49.7								
07:45 – 08:00	32.6	36.1	26.8	49.6								
08:00 – 08:15	33.9	33.1	25.4	54.8								
08:15 – 08:30	33.3	34.7	26.5	54.6								
08:30 – 08:45	33.4	34.6	26.4	56.4								
08:45 – 09:00	33.7	34.2	26.8	62.2								
09:00 – 09:15	34.3	35.6	26.4	59.8								
09:15 – 09:30	33.4	33.2	25.6	57.5								
09:30 – 09:45	33.7	33.4	25.6	61.0								
09:45 – 10:00	34.6	34.7	24.7	54.4								

Internal Room Noise Measurements – MP2

Survey Period : 22:30 – 01:00 Hours)

Measurement Period : 15 Minutes

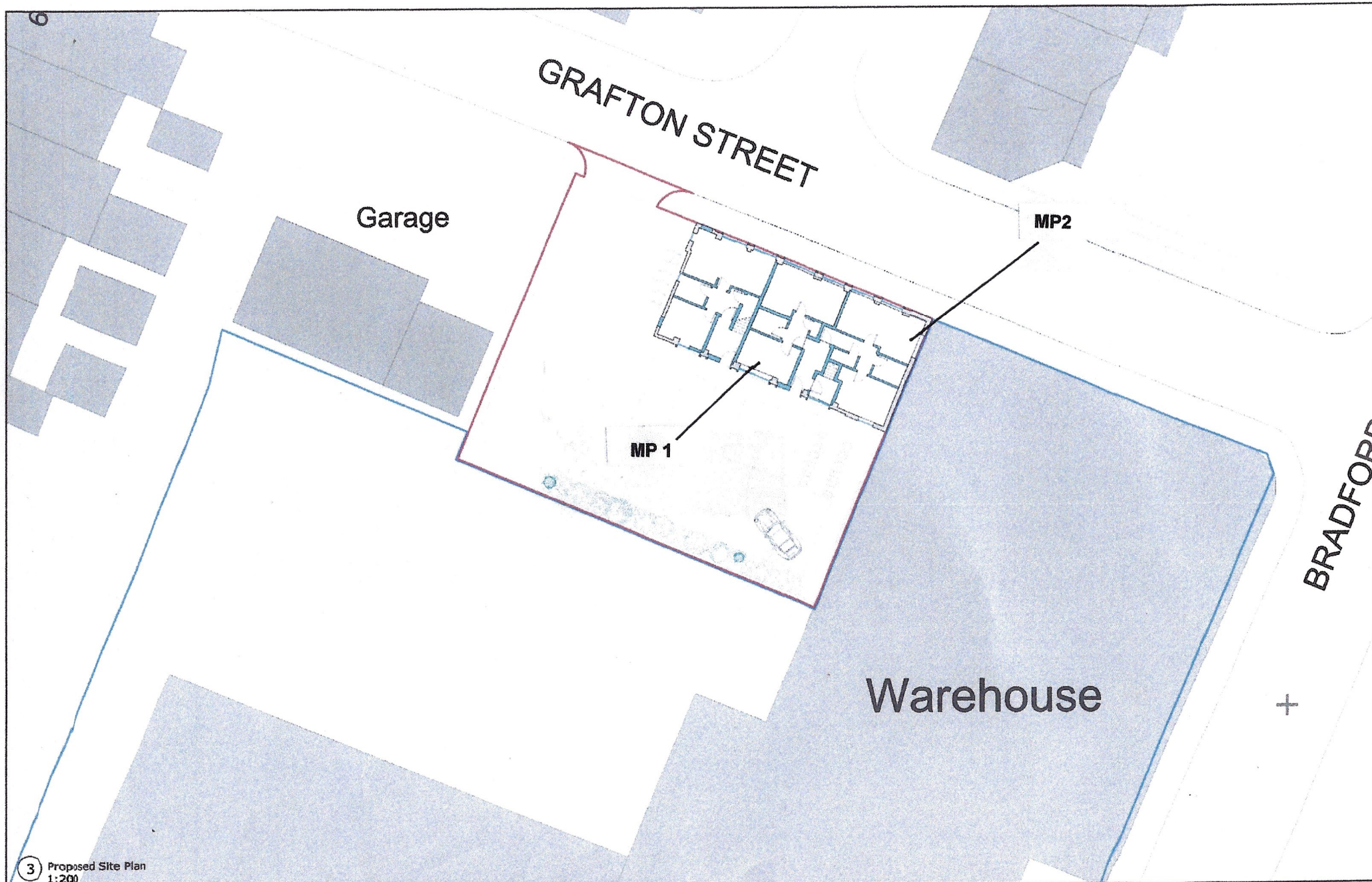
Time Period	A Weighting				Lz Octave Band Centre Frequency (Hz)							
	L _{Aeq}	L ₁₀	L ₉₀	L _{max}	63	125	250	500	1k	2k	4k	8k
23:00 – 23:15	41.8	43.4	37.5	60								
23:15 – 23:30	41.0	43.1	37.5	51.3								
23:30 – 23:45	45.9	49.1	37.6	70.6								
23:45 – 24:00	46.4	43.6	36.2	69.6								
24:00 – 00:15	43.3	42.1	34.3	71.2								
00:15 – 00:30	48.5	44.1	35.9	76.3								
00:30 – 00:45	44.9	43.8	35.2	76.3								
00:45 – 01:00	45.0	44.2	36.7	68.3								

Internal Room Noise Measurements_MP2

Survey Period : 06:00 – 10:00 hours

Measurement Period : 15 minutes

Time Period	A Weighting				Leq Octave Band Centre Frequency (Hz)							
	LAeq	L10	L90	Lmax	63	125	250	500	1k	2k	4k	8k
06:00 – 06:15	38.4	39.2	23.1	56.7								
06:15 – 06:30	38.4	41.5	23.3	56.3								
06:30 – 06:45	40.5	44.0	23.5	64.8								
06:45 – 07:00	41.6	46.6	24.7	56.3								
07:00 – 07:15	43.4	47.9	27.4	61.0								
07:30 – 07:45	45.4	49.6	28.9	54.8								
07:45 – 08:00	47.1	50.7	32.8	64.8								
08:00 – 08:15	47.5	51.0	34.7	59.1								
08:15 – 08:30	47.5	50.9	39.1	59.6								
08:30 – 08:45	47.5	50.5	39.9	58.4								
08:45 – 09:00	48.1	50.6	43.1	59.6								
09:00 – 09:15	47.3	50.3	39.6	54.4								
09:15 – 09:30	46.1	49.4	38.0	611.6								
09:30 – 09:45	47.6	50.2	38.0	66.0								
09:45 – 10:00	45.6	49.2	35.3	54.6								



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- Responsibility for measurements remains with the Principal Contractor.

Scale bar at 1:250

0 1m 2m 3m 4m 5m 10m 20m

NORTH



Address:	Dixon Hall, Grafton Street, Balley, WF17 6AR	Scale: 1:250 at A3	Drawing: 2120-LP02	Date:
Proposals:	Proposed change of use of office building to residential units	Drawn by: JPT	Revision: -	Status:
Drawing Title:	Proposed Site Plan	T: 01423 705077	E: andrew@edgarchitecture.co.uk	