NOISE ASSESSMENT OF
SITE AT
SHEFFIELD ROAD
PENISTONE

An Assessment on Behalf of
Mark Russell

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SHEFFIELD ROAD
PENISTONE

Environmental Studies
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1. Background

Following the submission of a planning application to construct 4 houses on a site at Sheffield Road in Penistone, Barnsley MBC's Planning Department requested that a noise survey be conducted l in order to assess the noise impact of a building supplies yard to the rear of the site. It was noted during site visits that the nature of noise from this source was largely vehicular noise - vehicles arriving/departing/idling (whilst loading/unloading). Also, an additional noise contribution was found to be audible at the rear of the existing derelict properties on the site, from road traffic on Sheffield Road to the front.

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2. Criteria

In terms of road traffic noise, Local Planning Authorities still tend to base their assessments on the guidance contained in the Department of Environment publication 'Planning Policy Guidance : Planning and Noise' (PPG 24). This document considers the daytime and night-time noise environment of a site and categorises it based upon these noise levels.

NOISE LEVELS CORRESPONDING TO THE NOISE EXPOSURE **Categories for New Dwellings L_{AeqT} dB**				
	NOISE EXPOSURE CATEGORY			
NOISE SOURCE	**A**	**B**	**C**	**D**
Road traffic				
07.00 – 23.00	<55	55 – 63	63 –72	>72
23.00 – 07.00	<45	45 – 57	57 – 66	>66
Rail traffic				
07.00 – 23.00	<55	55 – 66	66 – 74	>74
23.00 – 07.00	<45	45 – 59	59 – 66	>66
Air traffic				
07.00 – 23.00	<57	57 – 66	66 – 72	>72
23.00 – 07.00	<48	48 – 57	57 – 66	>66
Mixed sources				
07.00 – 23.00	<55	55 – 63	63 – 72	>72
23.00 – 07.00	<45	45 – 57	57 – 66	>66

Where:-

NEC	
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.

BS 8233:1999 ('Sound insulation and noise reduction for buildings – Code of practice') gives guidance on acceptable noise levels within dwellings (Table 5 Section 7.6.1.3). The following table shows the internal noise levels it recommends with regard to housing:-

Criterion	Typical Situations	Design range $L_{Aeq,T}$ dB	
		Good	Reasonable
Reasonable resting/sleeping conditions	Living Rooms	30	40
	Bedrooms	30	35

For amenity garden areas a daytime L_{Aeq} noise level in the low 50's is generally deemed desirable.

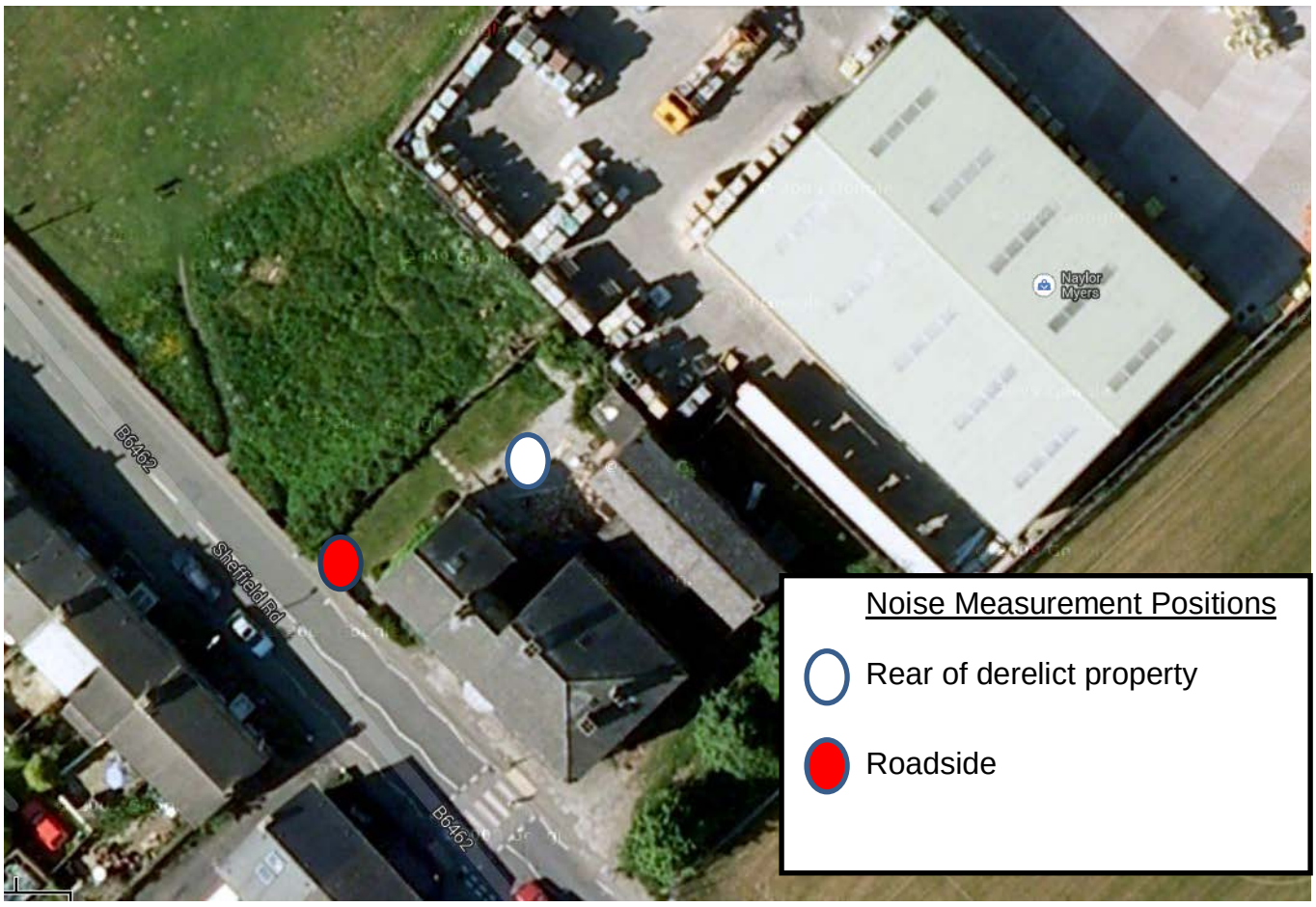
3. Method of Assessment

Barnsley MDC requested that noise be measured during two periods - between 5 am and 7 am and between 1pm and 3 pm. Noise was measured during these two periods whilst weather conditions were appropriate and traffic was running normally.

4. Noise Measurements

Noise measurements were conducted on 4th March 2014 between 1 pm and 3 pm on 11th March 2014 between 5 am and 7 am.

Equipment used:	CEL 268 Type 1 Environmental Noise Meter (serial nos. 093146 & 074161)
Calibration:	Field calibration was carried out before and after the noise measures using CEL 284/2 Acoustical Calibrator (serial no.06411727) All equipment used was within manufacturer's spec. calibration.
Weather:	At the time of the afternoon noise measures the weather was warm and sunny with a slight south-westerly breeze. At the time of the early morning measurements, it was still and cold, with patchy mist clearing during the first hour.
Noise Sources:	The site of the proposal is bordered to the front by Sheffield Road (B6462) and to the rear by a building merchant's yard.
Microphone Position	The microphone was located on a tripod in the middle of the back yard of the existing building, at a height of 1.5 metres. Some additional short-term daytime noise measurements were made on Sheffield Rd.



5. Results

The measured noise values at the Penistone site were as follow:

Daytime Noise Values (13.00 – 15.00)

Location	L_{Aeq} (dB)	L_{A10} (dB)	L_{A90} (dB)	L_{MAX} (dB)
Rear of existing properties	53.4	56.0	45.0	76.6
Front of existing properties	63.2	67.0	48.0	81.5

Night-time Noise Values (05.00 – 07.00)

Location	L_{Aeq} (dB)	L_{A10} (dB)	L_{A90} (dB)	L_{MAX} (dB)
Rear of existing properties	52.0	52.5	36.0	84.8
Front of existing properties	55.5	55.0	39.0	87.6

5.1 PPG 24 Assessment

Assessing the site in terms of PPG 24, based on the noise measurements conducted the proposal falls into Noise Exposure Category 'B' whereby :

"Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise."

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5.2 BS8233 Evaluation

Based on the noise measurement exercise, closed standard double-glazed units in the rear façades of the proposed houses would be sufficient to reduce the measured noise levels to the 'good' internal noise standard quoted in BS 8233. Units which incorporate 2 different thicknesses of glazing would guard against resonant frequencies (and so improve the acoustic envelope).

In the front façades of the proposed houses (facing onto Sheffield Road), closed standard double-glazed units would be sufficient to achieve the 'reasonable' standard quoted in BS 8233. Again, units which incorporate 2 different thicknesses of glazing would guard against resonant frequencies. Upgrading the window spec. in habitable rooms here (Living Rooms/Dining Rooms/Bedrooms) would bring then into BS 8233's 'good' standard.

6. Discussion

Appendix 1 of this report details the noise attenuation values associated with various glazing configurations. As can be seen, closed sealed units of an equivalent standard to Reference 4 would comfortably give sufficient noise reduction to achieve the 'good' standard of BS 8233 throughout.

The developer has mentioned on the plans of the proposal their intention to retain the existing 2.2 metre high block wall at the rear of the plot (and to cover it with close boarded fencing) : if this barrier was to be extended to cover the whole of the rear site boundary and enough of the north-western site perimeter toscreen the garden areas, further acoustic benefits would be achieved for the proposal (and garden areas).

7. Conclusions

Whilst the site at Penistone is bordered by a builders yard to the rear, noise from this source was not found to be intrusive during the 2 noise measurement exercises conducted within the site, and by incorporation of some of the mitigation measures suggested within this report, the impact could be reduced further still.

Tim Summers AMIOA
March 2014

APPENDIX 1

TYPICAL SOUND REDUCTION OF GLAZED UNITS

REF NO	UNIT	Noise Reduction In dB(A) (R_W)*
1.	Single, 4mm glass	30
2.	Sealed unit 4/6/4 (4mm glass/6mm space/4mm glass)	31
3.	Sealed unit 6/12/6	33
4.	Sealed unit 4/12/10	36
5.	Single 6.4 laminated glass	36
6.	Sealed unit 6.4/12/10	40
7.	Sealed unit 10/12/17	45
8.	Double 6/100/4 with lined reveals	46
9.	Double 4/150/4 with lined reveals	47
10.	Double 10/200/6 with lined reveals	49

All values based on published research by Pilkington Glass.

*R_W is the noise reduction index referred to in
Planning Policy Guidance 'Planning and Noise' (PPG 24)