

Sound Advice

Noise and Vibration Consultancy
Surveys and Training

Our Ref: Janet Dixon Clitheroe Road Rev1:

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Report on the noise aspects of a
proposed small housing development at
Clitheroe Road, Barrow

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Prepared for:

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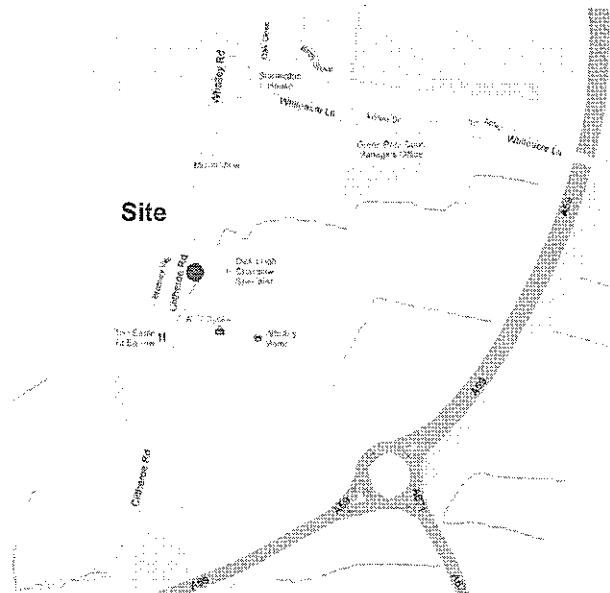
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Introduction:

There is a proposal for the use of a strip of land opposite Bramley View, Clitheroe Road, Barrow for 7 new dwellings (Planning reference: 3/2012/617). The site is located immediately to the west of an existing dwelling at Ashleigh and is also adjacent to an area of light industries at the Whalley Industrial Estate (see map inset right).

In a memo to the Ribble Valley Planning Department dated 31st July 2012, Neil Martin of the Environmental Services Department raised the issue that the noise generated from the industrial premises may have the potential to affect the background noise in the area. Mr Martin suggested that a condition should be imposed requiring a noise survey to clarify any necessary mitigating measures prior to full planning approval.



Mr Martin made no comment about road traffic noise at the time. However, a subsequent noise survey report for a much larger housing development (504 dwellings) just to the northwest of this location, but adjoining the same road, made recommendations for suitable glazing for windows. This report was produced by MES (Martin Environmental Services). Sound Advice considers this to be a relevant aspect to the development and has contacted Mr Martin (now at South Ribble Council) who agreed that this should have been raised and MES who have expressed no concern at the data being used since it is in the public domain on file with Ribble Valley Council (Planning reference: 3/2012/630).

Therefore, the purpose of this report is to measure the typical noise from the industrial area and to estimate the likely effect on the proposed dwellings. If necessary, the report will suggest possible remedial measures to reduce the noise.

Measuring Equipment:

Measurements were taken using a Bruel & Kjaer Type 2260 "Investigator" Precision Sound Level Analyser to store overall noise and spectrum levels. The Meter was fitted with a wind-shield. The equipment was calibrated before and after the tests using a Bruel & Kjaer Type 4231 Class 1 Acoustic Calibrator with no deviation recorded. The equipment accuracy is traceable to UKAS. The data was transferred to the Bruel & Kjaer Type 7820 Evaluator software program for calculation and graph presentation. All the data in this report is copied directly from the software.

Assessment Method:

The sound level meter was positioned on a tripod at the location of the rear of the closest proposed dwelling to the industrial area. The meter recorded the ambient noise automatically for about one hour in the early afternoon. This was considered to be the time at which future residents might be wishing to enjoy the amenity of their gardens.

Results:

All values referred to in the text or used in calculations are rounded to the nearest dB in line with BS4142 and WHO protocols.

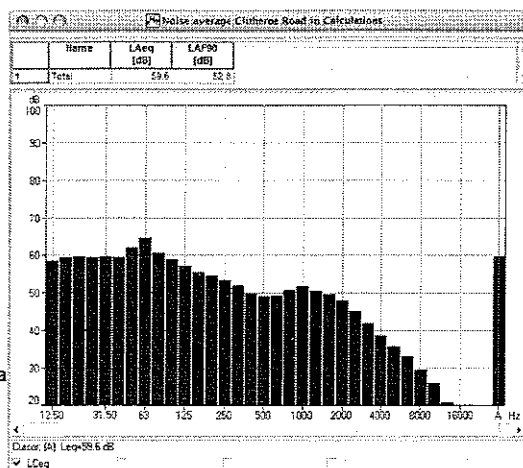
Subjective assessment:

The measurements were taken in the early afternoon of Friday November 2nd 2012 when the weather was cool and overcast but with very light variable winds. The most noticeable noise was from the regular traffic on the Clitheroe Road combined with the distant traffic noise from the Whalley bypass road running on the embankment to the south. There were no significant noises of any kind from the industrial area.

Measured data:

1. The C-weighted spectrum and overall dB(A) level of the averaged noise are inset right. The spectrum is absolutely typical of traffic noise with the two "humps" of low frequency engine noise and higher frequency tyre noise. Any industrial noise would be swamped by this energy and this measurement is therefore irrelevant to the industrial noise. The overall level was

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rounded to 60dB(A). This is entirely consistent with the MES data as can be seen below.

Results (continued):

2. The MES report measured the road traffic on Whalley Road and its likely impact on the proposed dwellings. The LAeq (16hr) level for the daytime period gave a PPG24 rating of 59dB(A). This results in a Noise Exposure Category of B. The nighttime level will be much lower than this due to the substantially reduced traffic flow.

Assessment Calculations and Recommendations:

1. The original concern of the Ribble Valley Environmental Services Department about noise from the Whalley Industrial Estate appears to be unfounded. There is currently no significant noise that is subjectively noticeable and there is no noise that can be measured over and above the general noise from the nearby road traffic of 60dB. This noise would normally be of concern for amenity areas if they were facing the road but this is not the case.
2. The position of gardens for residents will be behind the houses. This will provide a very substantial noise barrier to traffic noise. A reduction of at least 15 to 20dB could be expected which will produce noise levels in gardens of just over 40dB(A). This is well below WHO guidelines of less than 50dB(A) to avoid even "Moderate Annoyance" and will therefore provide acceptable conditions.
3. From the MES report, taking the daytime level to be the worse case situation, and in line with the WHO criteria, in order to achieve a level of 30dB(A) in the front bedrooms of the proposed properties, the noise insulation performance of the windows would need to be: $59 \text{ LAeq (16hr)} - 30 \text{ (criterion level)} = 29\text{dB}$
4. The specification for the glazing required would therefore appear to need to be only a 4/6/4mm unit since these units have a published noise insulation figure (Rw) of 31dB. However, due to the low frequency noise generated by traffic it would be more appropriate to consider the Rtra parameter, which reflects the glazing resistance to traffic noise. Therefore a more suitable choice would be for a glazing specification of at least a 10/12/4mm unit, which will provide a resistance to traffic noise of 30dB Rtra.
5. The insulation provided by the above glazing units is only applicable when the windows are closed. As an open window will only provide at maximum 15dB(A) insulation, in order to achieve the sought after 30dB(A) in the bedrooms, windows must remain closed. Therefore some form of additional ventilation will be required. The simplest solution would be for a passive ventilation system such as a louvered ventilation duct fitted to the wall or tricklevent in the window frame. These systems provide as much attenuation as the closed window, particularly at

lower frequencies, while allowing adequate ventilation. There are multiple versions and specialist advice should be sought to select the correct option.

Conclusions and Recommendations.

1. The typical noise in the area would appear to be entirely due to passing traffic. This noise can be adequately protected against for rooms to the front of the houses by the selection of suitable glazing and by the barrier effect of the houses themselves for amenity areas to the rear.
2. If the recommendations of this report are followed, there would seem to be no valid reason on noise grounds for full Planning Permission to be refused.
3. However, as an added protection against any future noise affecting amenity areas, it would be prudent to erect a solid fence of at least 2m in height along the rear perimeter of the proposed houses.

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