

Noise Technical Note

Project: Land Adjacent to A48, Pyle, Bridgend (BCBC Local Plan Review)

SMA Ref: 6139

Subject: Noise Considerations

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Checked by: Stuart Atkinson Date: 01 October 2018

1.0 INTRODUCTION

- 1.1. Stuart Michael Associates Limited (SMA), consulting engineers, has been engaged by Geraint John Planning Ltd on behalf of the landowners to provide initial high level advice on the noise considerations (M4, local roads, rail and industrial). This is to inform the preparation of representations to be made to the Council in support of the Candidate Site for residential development (hereinafter referred to as “the Site”) at land adjacent to the A48, Pyle, Bridgend.
- 1.2. Refer to **Figure 1.1** below for the site location plan. The Site comprises parcels A and B. However, parcels C and D may form part of the overall strategic objective for promotion of the site and the adjoining land. Therefore this Technical Note has taken into account these four parcels of land.
- 1.3. A site visit was undertaken on 27th September 2018 to familiarise with the locality and consider the different sources of existing noise.

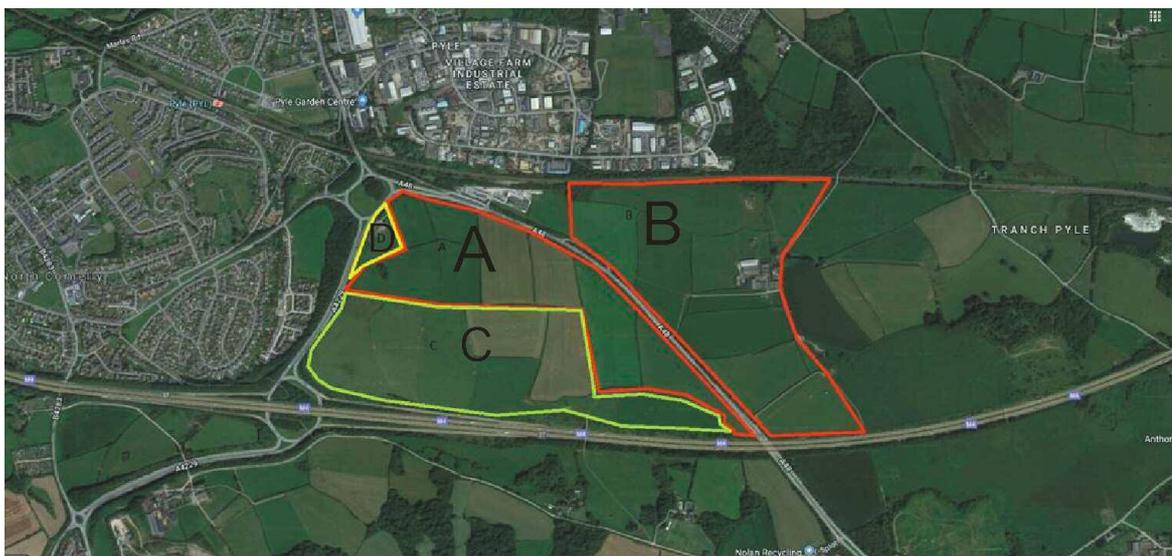


Figure 1.1: Site Location Plan

- 1.4. The Site is located in an area which has the potential to be affected by road traffic noise (A48, M4 and A4229), railway noise from the South Wales Mainline and industrial noise from the Village Farm Industrial Estate.
- 1.5. This Technical Note discusses the noise policy considerations and the noise profile of the Site. A detailed noise assessment (including measurements) would be undertaken prior to the submission of a planning application.
- 1.6. With appropriate mitigation, the proposed development site can be regarded as being appropriate for residential development. At the appropriate time, a detailed noise measurement survey should be conducted and noise modelling undertaken to confirm optimum site layout and mitigation strategy.

2.0 LEGISLATION AND POLICY

Planning Policy Wales

- 2.1. The Welsh Government has set out its Planning Policy under Planning Policy Wales (PPW), Edition 9 (November 2016). This document sets out the land use planning policies of the Welsh Government. The PPW guides the Welsh Government's commitment to sustainable development in the planning system. Chapter 13 of PPW considers minimising and managing environmental risks and pollution. With respect to noise, Paragraph 13.14.1 details:

“Development plan policies should be designed to ensure, as far as is practicable, that noise-sensitive developments, such as hospitals, schools and housing, that need to be located close to the existing transportation infrastructure to facilitate access, are designed in such a way as to limit noise levels within and around those developments. Such development should be located away from existing sources of significant noise including air transport and some industrial activities or programmed development such as improved or new roads. Policies should also be designed to ensure, as far as possible, that potentially noisy developments are located in areas where noise will not be such an important consideration or where its impact can be minimised. Local planning authorities should adopt policies to prevent potentially noisy developments in areas which have remained relatively undisturbed by noise. Development plan policies should have regard to any relevant Noise Action Plan, including the need to protect urban ‘quiet areas’ against an increase in noise.”

Local Policy

- 2.2. Bridgend County Borough Council adopted its Local Development Plan (LDP) on 18 September 2013. The Bridgend CBC Local Development Plan 2006-2021 details the local planning policy for the area. LDP policies relevant to noise and related matters that are applied are summarised below:

Strategic Policy SP2 – Design and Sustainable Place Making

- 2.3. “All development should contribute to creating high quality, attractive, sustainable places which enhance the community in which they are located, whilst having full regard to the natural, historic and built environment by [inter alia] avoiding or minimising noise, air, soil and water pollution.”

Policy ENV7 – Natural Resource Protection and Public Health

- 2.4. “Development proposals will only be permitted where it can be demonstrated that they would not cause a new, or exacerbate an existing, unacceptable risk of harm to health, biodiversity and/or local amenity due to ... noise pollution.”
- 2.5. Policy ENV7 ensures that developments that would result in unacceptably high levels of noise, light, water or air pollution are located away from residential areas and other sensitive uses. The policy will also ensure that development proposals are not located in close proximity to existing sources of pollution, including noise, which have not previously been addressed.

WHO Guidelines and BS 8233:2014

- 2.6. Guidance on absolute limits for noise inside buildings is provided in BS 8233:2014 “Sound insulation and noise reduction for buildings – Code of practice”. Similar guidance can also be found in the current World Health Organization (WHO) “Guidelines on Community Noise” and “Night Noise Guidelines for Europe” and the BRE/CIRIA document “Sound control for homes”. A summary of the noise criteria can be seen in **Table 2.1**.

Table 2.1: Summary of Internal Noise Criteria: BS 8233 & WHO

Criterion	Activity	Location	0700 to 2300	2300 to 0700
BS 8233:2014	Resting	Living room	35 dB LAeq,16hr	-
	Dining	Dining room/area	40 dB LAeq,16hr	-
	Sleeping (daytime resting)	Bedroom	35 dB LAeq,16hr	30 dB LAeq,8hr
WHO Onset of sleep disturbance		Bedroom		30 dB LAeq,8hr

- 2.7. Individual noise events such as passing trains have the potential to cause sleep disturbance and the WHO recommend a reasonable individual noise event of 45 dB (LAmax,F) within the bedrooms during the night. Above this level the onset of sleep disturbance can occur.

- 2.8. Guidelines for external noise levels in public and private open space, such as gardens and parks, is available in the WHO guidelines. According to the WHO guidelines, during the daytime ($L_{eq,16hr}$), moderate annoyance may be experienced at noise levels between 50 dB(A) and 55 dB(A) and serious annoyance may be experienced above 55 dB(A).
- 2.9. During the night time ($L_{eq,8hr}$), an interim target (IT) level of 55 dB(A) is recommended (from WHO Night Noise Guidelines for Europe – 2009). The 55 dB(A) is the lowest observed adverse effect level (LOAEL).

3.0 NOISE ENVIRONMENT

- 3.1. Prior to submitting a planning application, a detailed noise assessment should be undertaken and submitted to Bridgend CBC. For this site, the topography plays an important role in assessing the noise environment. The noise assessment should therefore incorporate both long-term noise measurements and desktop noise modelling to determine the acoustic profile across the site.
- 3.2. For the development site, the key noise considerations to take into account are:
- Railway noise from the South Wales Main Line;
 - Road traffic from the A48, A4229, M4 motorway;
 - Industrial noise from the Village Farm Industrial Estate.
- 3.3. **Figure 3.1** illustrates the locations of the existing dominant noise sources. Clearly the noise levels will vary according to the location within the site.

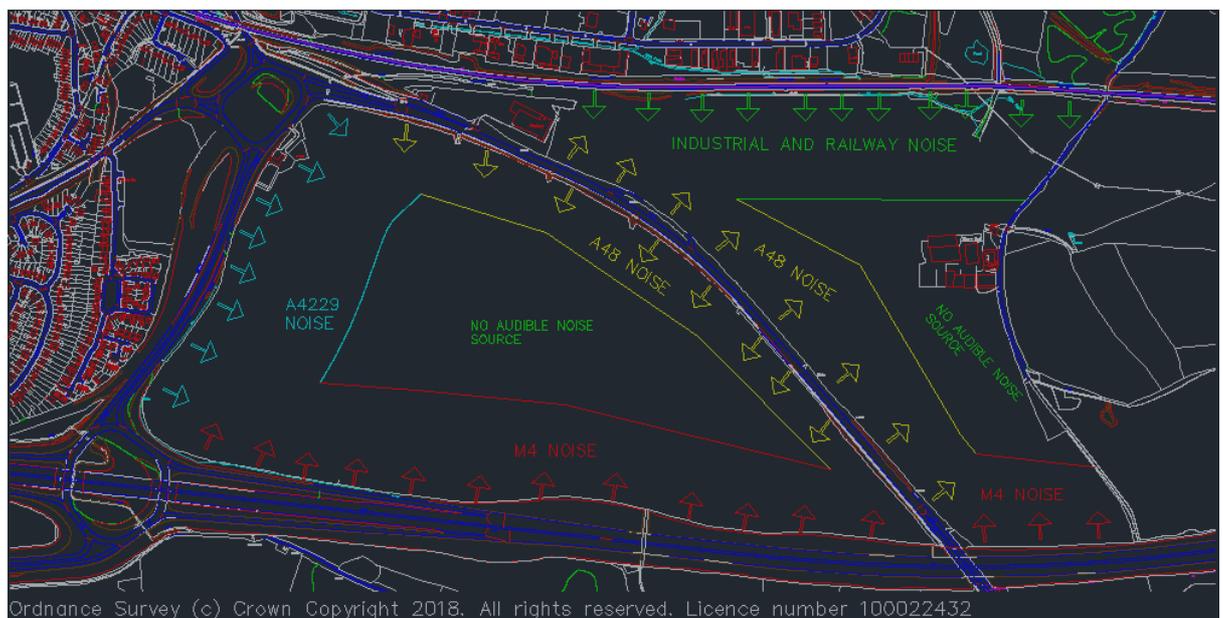


Figure 3.1: Principal Noise Sources

- 3.4. The A48 passes through the centre of the site. The road varies between a single and dual carriageway. It is subject to a 50mph speed limit. The A4229 is a dual carriageway which runs to the west of the site.
- 3.5. The M4 motorway bounds the southern section of the site. As the M4 is, in part, in cutting with the landscape, it is unlikely to be overly dominant or intrusive for the majority of the site.
- 3.6. To the north of Parcel B, noise from the railway and the industrial estate will be the dominant sources. For this section of the site, a BS 4142:2014 assessment should be undertaken to assess noise from the industrial and commercial premises. A BS 8233:2014 assessment should take into account and have regard to the maximum noise levels from the railway line during the night-time period.
- 3.7. To the south / west of Parcel B and to the north / east of Parcel A, road traffic noise from the A48 will be the dominant noise source. To the west of Parcel A road traffic from the A4229 is the dominant noise source. For these sections, a BS 8233:2014 assessment should take into account average and maximum noise levels within the site.

4.0 HEADLINE OVERVIEW AND POTENTIAL MITIGATION STRATEGY

- 4.1. Development areas nearest to the various noise sources will require mitigation. The site masterplan should therefore make provisions for mitigation.
- 4.2. To reduce noise levels to below the internal and external noise levels presented in the WHO guidelines, in BS 8233 and in local planning policy, a commensurate level of mitigation can be provided.
- 4.3. Within the buildings, daytime and night time noise levels can be achieved with the use of thermal double glazed windows and appropriate forms of alternative ventilation. Other mitigation options such as acoustic barriers, juxtaposition of buildings to shield areas and specific locational separation distances (source to receptor) can be examined and included in the mitigation proposals.
- 4.4. The positioning of development plots and boundary treatments will enable sufficient mitigation to be achieved in compliance with BS8233. Positioning the main structure of the building between the noise source and the garden will ensure an area where future residents can enjoy their outside amenity space without being subjected to excessive noise levels.
- 4.5. A noise mitigation strategy would be prepared to accompany a planning application and ensure that noise levels adhere to guideline levels.

5.0 SUMMARY AND CONCLUSIONS

- 5.1. Stuart Michael Associates Limited (SMA), consulting engineers, has been engaged by Geraint John Planning Ltd on behalf of the landowners to provide initial high level advice on the noise considerations (M4, local roads, rail and industrial). This is to inform the preparation of representations to be made to the Council in support of the Candidate Site for residential development at land adjacent to the A48, Pyle, Bridgend.
- 5.2. A site visit was undertaken on 27th September 2018. Based on the site visit, it was determined that the main noise sources at the site relate to road traffic, rail locomotives and the industrial estate.
- 5.3. A detailed noise assessment should therefore be undertaken prior to submitting a planning application. Noise monitoring at various locations and noise modelling will be undertaken to determine the noise profile throughout the site. Based on the results of the monitoring and modelling, appropriate noise mitigation will be recommended to ensure that noise levels accord with national and local standards and guidelines for internal and external areas.
- 5.4. It is concluded that, with appropriate mitigation, the proposed development site can be regarded as being suitable for residential development. At the appropriate time, a detailed noise measurement survey should be conducted and noise modelling undertaken to confirm optimum site layout and mitigation strategy.