



## **Town and Country Planning Act 1990**

### **Town and Country Planning (Major Infrastructure Project Inquiries Procedure) (England) Rules 2002**

#### **Appeal by Helioslough Ltd**

**Site at Land In and Around Former Aerodrome, North Orbital Road,  
Upper Colne Valley**

**Planning Inspectorate Reference: APP/B1930/A/09/2109433/NWF**

**Bureau Veritas Reference: 3740512/POE/2 Rev 0**

**Date: 26<sup>th</sup> October 2009**

#### **Summary Proof of Evidence**

**S Stephenson BSc(Hons), MIOA, CEng  
Bureau Veritas UK Limited**

## **1 Introduction and Scope of Evidence**

- 1.1 My name is Simon Stephenson. I am a Principal Consultant in the Acoustics and Vibration group of Bureau Veritas. I hold a Bachelor of Science (Honours) degree in Physics and I am a member of the Institute of Acoustics and a Chartered Engineer.
- 1.2 This Inquiry is being held into an appeal against St Albans District Council's refusal of Helioslough Limited's planning application to develop a Strategic Rail Freight Interchange near Radlett, Hertfordshire.
- 1.3 My evidence addresses the noise issues associated with the environmental and community impact of constructions works and the operation of the proposed development.

## **2 Site Description**

- 2.1 The proposed site is to be located at land in and around a former aerodrome to the south of North Orbital Road, Upper Colne Valley, near Radlett, Hertfordshire. There are residential properties and developments surrounding the site, including new housing developments to the west and east of the site at Curo Park and the former Napsbury Hospital
- 2.2 The noise environment in the area is mainly influenced by noise from distant road traffic during the daytime, especially from the M25 and trains on the midland mainline railway line.
- 2.3 A full description of the proposed development and surrounding area is given in the Environmental Statement prepared by CgMs Consulting on behalf of Helioslough.

## **3 Assessment Methodology and Criteria**

- 3.1 Government guidance is provided primarily through Planning Policy Guidance (PPG) 24 (Planning and Noise).
- 3.2 In terms of operational noise, it is appropriate to assess the impact from noise in accordance with the policies in PPG24 and the St Albans District Local Plan, by undertaking a BS 4142 assessment, by



comparing absolute levels against the criteria set out in WHO guidance (for both  $L_{Aeq}$  and  $L_{Amax}$ ) and by examining the change in noise as a result of the development.

- 3.3 For long-term construction activity, it is relevant to adopt the approach suggested in Minerals Policy Statement 2 by assessing the noise level due to construction activities at the exterior of any residential properties, relative to the existing background noise level during the daytime (subject to a maximum free-field level of 55 dB  $L_{Aeq,1h}$ ). For night-time construction noise an external limit of 42 dB  $L_{Aeq,1h}$  is appropriate. For short-duration activities, such as earth bund construction, I believe that a higher daytime limit of 70 dB  $L_{Aeq,1h}$  would be appropriate.

## 4 Assessment of Impact Due to the Development

### *Operational Noise*

- 4.1 I have undertaken a review of the Environmental Statement relating to this application and have undertaken my own assessment of the impact due to the development.
- 4.2 The BS 4142 assessment procedure provides an indication of the likelihood of complaints when the development is first opened and has been used for many developments which are similar to this one.
- 4.3 I have used the typical background noise levels presented in the ES, alongside the predicted noise level due to on-site activities, to conduct a BS 4142 assessment. A 5 dB character correction has been added to the specific level because it is considered that the noise is likely to be irregular and will contain 'bangs and clatters'. The results of the BS 4142 assessment show that the difference between the background noise level and the noise rating level will be as high as 20 dBA. Accordingly, it is concluded that the development, if permitted, would be likely to give rise to complaints.
- 4.4 It is recognised, however, that if the development can achieve the proposed limit of 50 dB  $L_{Aeq,8h}$ , noise levels may well be lower than this for some of the night. However, it is not possible to use the proposed limit value (expressed as a nightly average) to directly predict the likely noise rating level (which uses a 5 minute assessment period) due to the development. Notwithstanding this, I have undertaken a simple

BS4142 assessment and it is concluded that the level difference is likely to be as high as +15 dBA, meaning that complaints are likely.

- 4.5 I have undertaken an assessment of the changes in night-time ambient noise level which will be experienced as a result of the development, based on the predicted noise levels presented in the ES. The results show that a noise change of up to 10 dBA can be expected at some locations. A change of +10 dBA is normally taken to represent a doubling in loudness for steady noise and, in this context, the noise change due to this development would represent a significant negative impact at several locations.
- 4.6 The ES does not present likely  $L_{Amax}$  levels due to the proposed development. I have therefore undertaken my own assessment of likely maximum levels. My assessment indicates that the WHO criterion for onset of sleep disturbance is likely to be exceeded at some locations.
- 4.7 It is also relevant to compare the noise from the development against WHO absolute criteria for onset of sleep disturbance effects where the noise is steady and continuous. I have concluded that the noise environment at several locations will move from being slightly above the level for onset of sleep disturbance effects to a level which is well in excess of the criteria. Accordingly, the scheme has the propensity to result in a significant increase in sleep disturbance.
- 4.8 Moving on to the achievability of the proposed noise limit, Mr Sharps gave evidence at the last Inquiry to the effect that the propagation model used to predict noise from the development systematically over-predicts noise by a significant margin (up to 6 dB).
- 4.9 The reasons Mr Sharps has provided about why the ISO 9613 systematically over predicts noise are based on a misunderstanding of the standard's equations for ground effects, specifically in relation to the fact that the standard assumes spherical propagation from the outset, unlike other propagation standards which assume hemispherical propagation.
- 4.10 Secondly, Mr Sharps' claim that the proposed limit condition (measured using BS7445) will be lower than the level predicted in ISO 9613 for light downwind conditions is incorrect. BS 7445 presents two methods for assessing sound levels. The first method is to measure under specific (i.e. downwind) meteorological conditions and the second method is to measure under a range of meteorological conditions. Given that

PPG 24 recommends that measurements for assessing compliance with planning conditions should be made under a light wind with a vector component from source to receiver, it is the former method that should be used.

- 4.11 These two combined factors account for around 5 dBA of the claimed 6 dBA safety margin.
- 4.12 Accordingly, there is no substantiated evidence that the noise model will over-estimate the level of noise from the development and it is therefore concluded that the proposed noise limit condition will not be achievable.

### **Construction Noise**

- 4.13 Although it is possible to control the effects of noise from construction activities through powers under the Control of Pollution Act, it is also appropriate to consider construction noise under the planning process.
- 4.14 The criteria presented in the ES have “cherry-picked” certain sections from BS 5228 and ignored others. Given that the indicative duration of activities would be around five years, this level of impact would not be acceptable according to the criteria I believe are appropriate.
- 4.15 For example, it is concluded that the proposed limit of 55 dBA for night-time railway construction is likely to result in sleep disturbance for local residents, on the basis that it exceeds the levels for onset of sleep disturbance effects. By way of contrast, another similar scheme that I am aware of (Felixstowe Branch Line) has used a night-time noise limit of 45 dB  $L_{Aeq}$ .
- 4.16 The ES notes that noise levels during construction of earth bunds could reach 75 dB  $L_{Aeq,day}$ . This is some 5 dB in excess of the limit proposed in MPS2 and BS5228 for this type of activity.
- 4.17 It is recognised, however, that elevated noise levels will be required for some construction activities. Consequently, it is proposed that planning conditions should be imposed limiting construction noise, making allowances for temporary noisy activities. If acceptable planning conditions and limits could be agreed, then construction noise would no longer be a significant concern with regards to planning.

## 5 Conclusions

- 5.1 I have assessed the impact of the proposed scheme according to the relevant national and local plans and guidance.
- 5.2 The criteria used in the ES to judge the acceptability of the development are based on a misguided interpretation of government policy guidance as well as other guidance and standards.
- 5.3 Calculations show that the level of noise predicted in the ES would result in a BS4142 level difference of up to +20 dBA and, even if the proposed noise limit could be achieved, the difference would be up to +15 dB. It is therefore concluded that complaints would be likely as a result of this development.
- 5.4 In addition, changes to the noise climate will result in an increase in noise level over the criteria for onset of sleep disturbance effects reported in WHO Guidance.
- 5.5 Mr Sharps' conclusions about why the noise model will overestimate noise levels from the development are incorrect. There is no substantiated evidence that the noise model will over-estimate the level of noise from the development. The proposed planning limit condition for noise is, therefore, unlikely to be achievable.
- 5.6 Accordingly, it is concluded that the development will result in an unacceptable noise impact, contrary to the provisions of the Local Plan.