

Land North of Shenfield – Officer’s Meadow (R03) – Initial Review of Likely Noise Constraints

Introduction

This note sets out a Stage 1 Risk assessment to identify potential constraints relating to noise and vibration for the site allocation and developing masterplans. The advice below is based on a desktop assessment in this early stage, informed by initial computer modelling of the key transportation noise sources in the area (A12, A1023 and the mainline railway) and will be confirmed by a series of noise surveys and further computer modelling of the noise environment.

Risk Assessment Methodology

A risk assessment has been undertaken using the approach set out in the ANC/IoA/CIEH document “Professional Practice Guidance on Planning and Noise” (see Appendix 1). The assessment has been informed by reference to The National Planning Policy Framework, Noise Policy Statement for England and Planning Practice Guidance-Noise, along with British Standards 8233:2014 (“Guidance on Sound Insulation and Noise Reduction for Buildings”).

Policies SP01 Sustainable Development and HP13 Creating Successful Places of the Brentwood Local Plan (Regulation 19) pre-submission document are the key policies relating to noise. These both contain aims with regard to ensuring no unacceptable effects on health, the environment, or amenity due to noise (amongst other pollutants) and the mitigation of any impacts from noise. These policies are consistent with the NPPF and NPSE:

- (Para 170e, NPPF) *“Planning policies and decisions should contribute to and enhance the natural and local environment by...

...preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.”*
- Paragraph 180 (NPPF) *“Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life⁶⁰;*

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason...”

- The “Noise Policy Aims” of the NPSE (NPSE paragraphs 2.22 to 2.24) can be summarised as follows:
 - avoid significant adverse impacts on health and quality of life...;
 - mitigate and minimise adverse impacts on health and quality of life...; and
 - where possible, contribute to the improvement of health and quality of life...

Approach to masterplanning and assessment

The progression of the masterplan will be informed by the results of the noise surveys and modelling and the following design principles and hierarchy of noise control should and can guide the early masterplan and indicative layouts:

- Assess the site to identify and quantify significant noise sources
- Decide noise criteria and limits for spaces in and around the building(s)
- Evaluate the acoustic and cost effectiveness of design and layout options to manage noise impacts to acceptable levels
- Consider using sound insulation of building envelope in order to achieve acceptable acoustic conditions after attenuation by other options has been considered and does not perform adequately and/or is not cost effective.

Computer modelling of the key noise sources has been undertaken using SoundPLAN software. The model setting out the noise contours across the Site and surrounding areas is attached. This represents the noise environment dictated by the A12, A1023 and the mainline railway.

The noise contours (see Appendix 2) show daytime sound levels on the extremities of the site of up to 65 dB LAeq,16 hour, reducing to 55 dB LAeq,16Hr or less in the central areas of the site. The risk assessment for these sound levels is set out below.

Risk assessment for key noise sources

Road Traffic Noise

A12

Likely Risk – Low to Medium

The A12 is situated some 150 metres from the site boundary, and principally separated by the housing which fronts the A1023 Chelmsford Road. Whilst clearly contributing to a general background noise level

across the site, levels of road traffic noise from the A12 in isolation are unlikely to have a significant impact on the masterplan and these levels will be low risk, with the exception of some areas of the site to the south west where the site becomes more exposed to the A12 and the risk could increase to medium (in combination with the A1023 Chelmsford Road – see below).

A1023 Chelmsford Road

Likely Risk – Low to Medium

Noise from this road may have an effect on properties on the extreme western edge of the site where screening from existing properties on Chelmsford Road is reduced. The A1023 is a principal route into Shenfield and Brentwood from the A12 and carries a relatively high level of traffic. Beyond approximately 50 metres of the road, it is not expected that noise levels will be such as to require specific acoustic mitigation measures, and such measures, if required, would only be for the most exposed properties (i.e. the “front line” of properties on the site boundary if they are within approximately 30 metres of the road edge).

Rail Noise

Likely Risk – Low to Medium

The mainline railway (East Anglia to Liverpool Street) runs along the south eastern boundary of the site, with a further line (to Southend) joining from the east to the south of the site. Rail noise controls the noise climate along the south east of the site and sound levels are such that, within around 100 metres of the line the risk assessment would be medium. In more central location, and further from the line, the risk relating to rail noise would be low. Beyond approximately 50 metres of the rail line, it is not expected that noise levels will be such as to require specific acoustic mitigation measures, and such measures, if required, would only be for the most exposed properties (i.e. the “front line” of properties on the site boundary if they are within approximately 30 metres of the railway).

Other Noise Sources

Likely Risk - Negligible

Other potential sources of noise in the vicinity of the site are a petrol filling station to the north east and some limited commercial (auto repair centre) along Chelmsford Road to the south west. These are of sufficient distance from the site, and unlikely to be significant noise generators compared to the transportation noise sources dictating the noise climate and as such do not represent a constraint on the development.

General Conclusion

There are no significant constraints on the development site in relation to noise. There is a low to medium risk on the boundaries of the site with Chelmsford Road and the rail line, but the majority of the site would present a low risk:

"At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development."

Care should be taken within approximately 50 metres of Chelmsford Road and the rail line to ensure the design and mitigation measures take noise into account. Any future masterplanning or application should be accompanied by an Acoustic Design Statement which addresses those areas.

Notes

The advice above is based on a desktop assessment of likely noise sources and computer modelling of the noise environment across the site, with a "worst case" approach being taken to assess whether the risk is manageable so that an acceptable environment can be achieved. Modelling of masterplan layouts and design specifications for acoustic treatment can be undertaken as proposals progress. It is not possible to provide exact specifications or calculations at this stage, as the early site allocation nature of the proposals precludes such calculations (which would require details of building locations, room sizes, window sizes and internal layouts). In all cases, however, a masterplanning and mitigation strategy can be delivered where necessary to ensure internal levels within dwelling and external levels in garden areas are within the BS8233:2014 standards. It is not considered that there will be a significant need for noise mitigation measures or that noise represents a constraint on the development generally.

APPENDIX 1

ProPG Risk Assessment Criteria

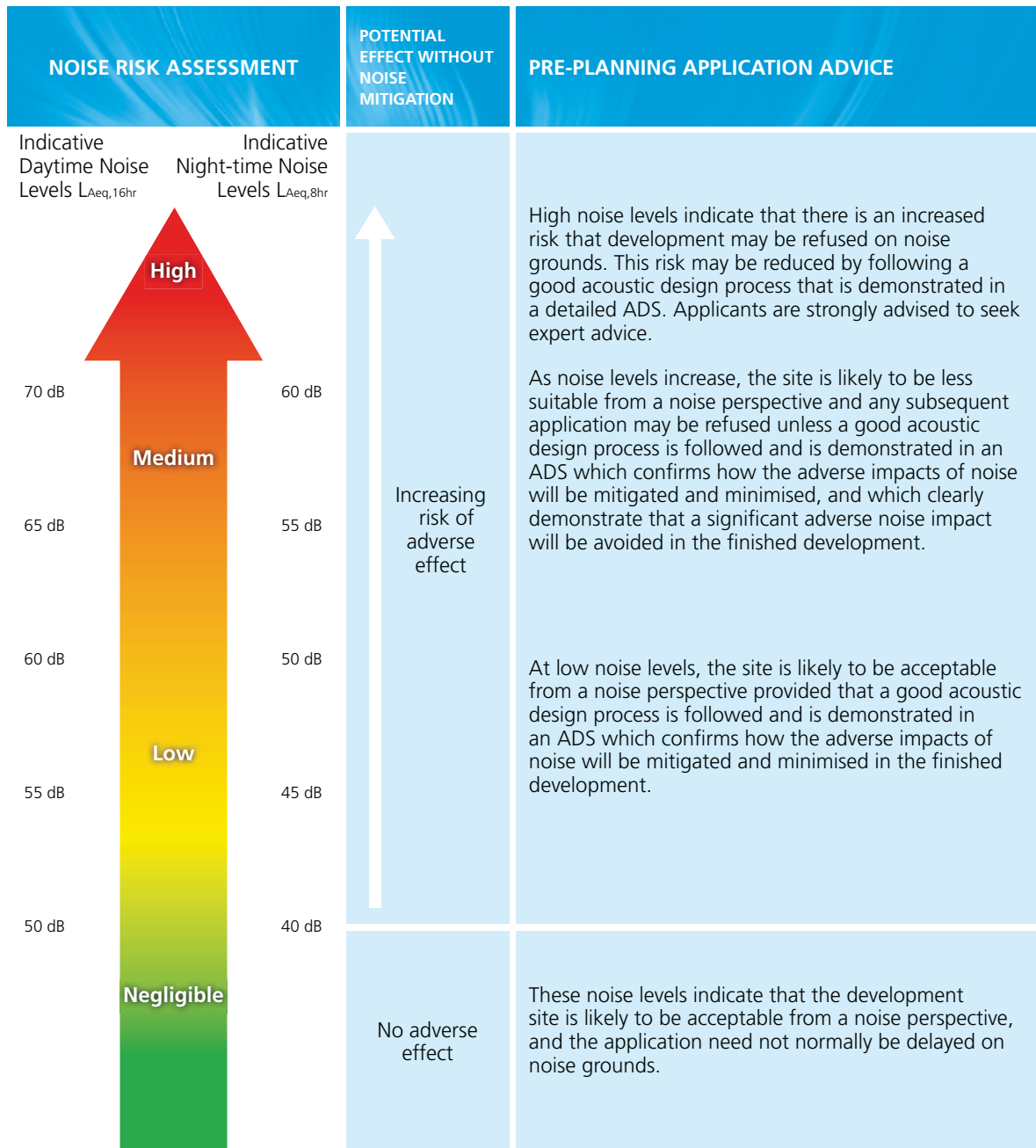


Figure 1 Notes:

- a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is “not dominant”.
- c. $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.
- d. An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.

Figure 1. Stage 1– Initial Site Noise Risk Assessment

APPENDIX 2

SoundPLAN Noise Contour Modelling

Signs and symbols

- Road
- Road axis
- Emission line
- Surface
- Railway
- Railway axis
- Emission line
- Surface
- Main building
- Receiver

Facade Noise Map

- Facade point
- Facade point with conflict
- Free field point
- Free field point with conflict

Building reference points

- Building reference point
- Building reference point with conflict

Noise level

LrD
in dB(A)

≤ 50	≤ 50
50 <	≤ 52
52 <	≤ 54
54 <	≤ 56
56 <	≤ 58
58 <	≤ 60
60 <	≤ 62
62 <	≤ 64
64 <	≤ 66
66 <	

