West of Gibfield Strategic Site (GM Allocation 51)

Strategic Environmental Noise Review

Peel Holdings (Land Property) Ltd

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Contents

1 Introduction

Cundall has been commissioned by Peel Holdings (Land & Property) Ltd to provide a desktop study of environmental noise issues and considerations for the proposed West of Gibfield strategic site, in relation to the proposed allocated usage.

This report documents relevant planning policies, identifies key noise sources to affect the site, and provides commentary on the initial outline masterplan. Where considered necessary at this stage of the review process, potential high level mitigation strategies are identified.

The scope of the assessment is based on good practice techniques and extensive previous experience of similar projects. Noise planning policies and assessment criteria which would be relevant to the site are given in Appendix I.

2 Site location

This assessment is in relation to land West of Gibfield, also referred to as Gibfield Park ("the Site").

It is understood that part of the site is identified for green belt release and allocation for a residential-led sustainable urban extension, including land for employment use, within the draft Greater Manchester Spatial Framework (January 2019), with the reference GM Allocation 51.

The Site is south of the Manchester to Wigan railway line and to the north of Smallbrook Lane (A577). It is situated between Atherton to the east and Westhoughton to the north west. The entirety of the Site is located within the authority of Wigan. A site location plan is provided below.

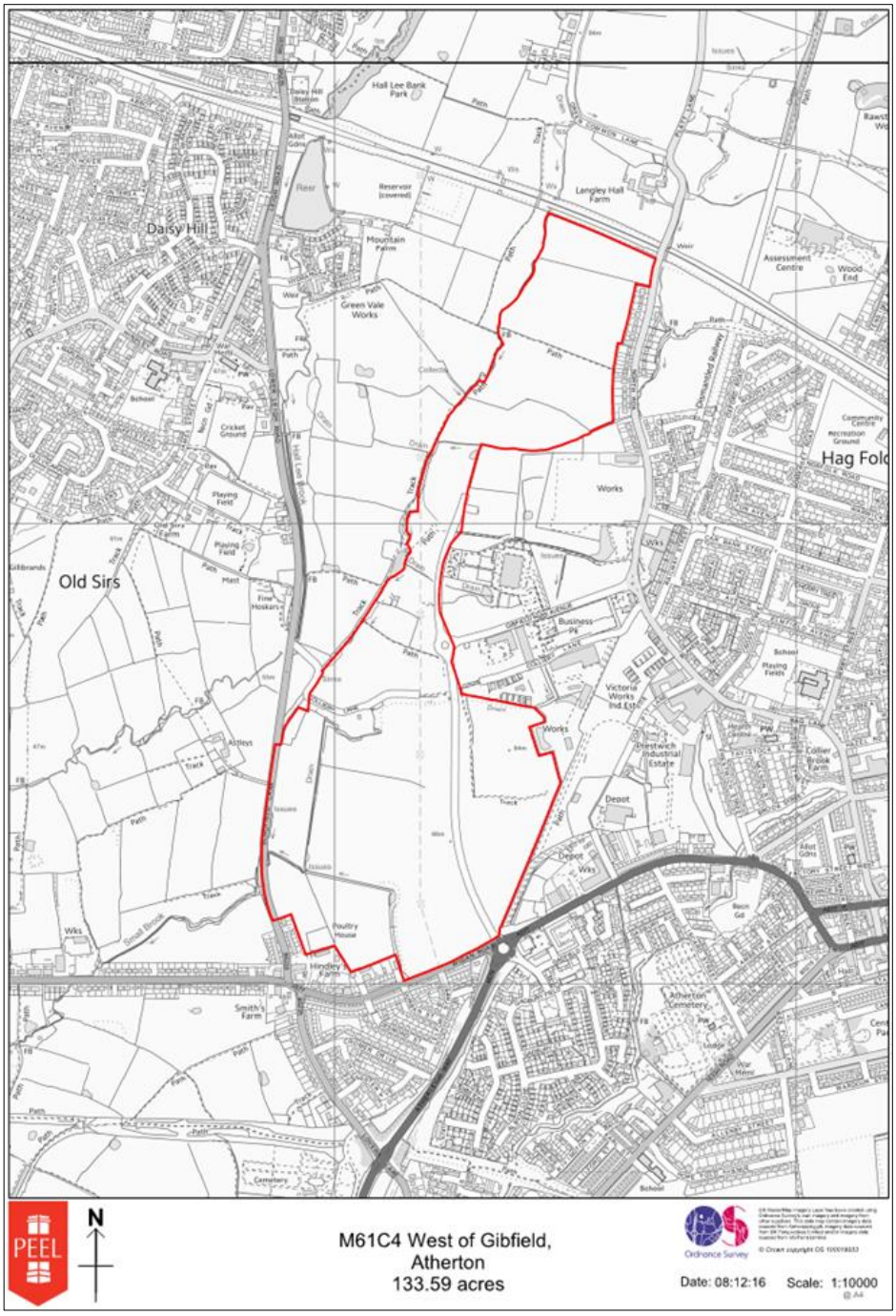

Figure 1 - Site 'red line' drawing (Drawing no. JG/GAC "Lumber Lane Worsley Salford")

3 Site context and outline proposals

The site location and extent are outlined in Section 2 above. The existing site is essentially undeveloped although an access road (Gibfield Park Way) runs through the southern section of the site; this provides access to an adjacent industrial estate. Land further to the east and west is primarily residential in nature. An initial high-level assessment would therefore suggest that the site could be appropriately developed for residential and employment use, given the established zones located nearby.

Prevailing noise levels from adjacent land uses would generally be expected to be acceptable. It is expected that mitigation measures could be employed to provide an appropriate acoustic climate, as demonstrated by established residential use of the surrounding areas.

3.1 Site masterplan and potential impacts

An illustrative masterplan for the site is reproduced in the figure below, indicating conceptual areas that could be used for development and incorporating significant areas of open space.

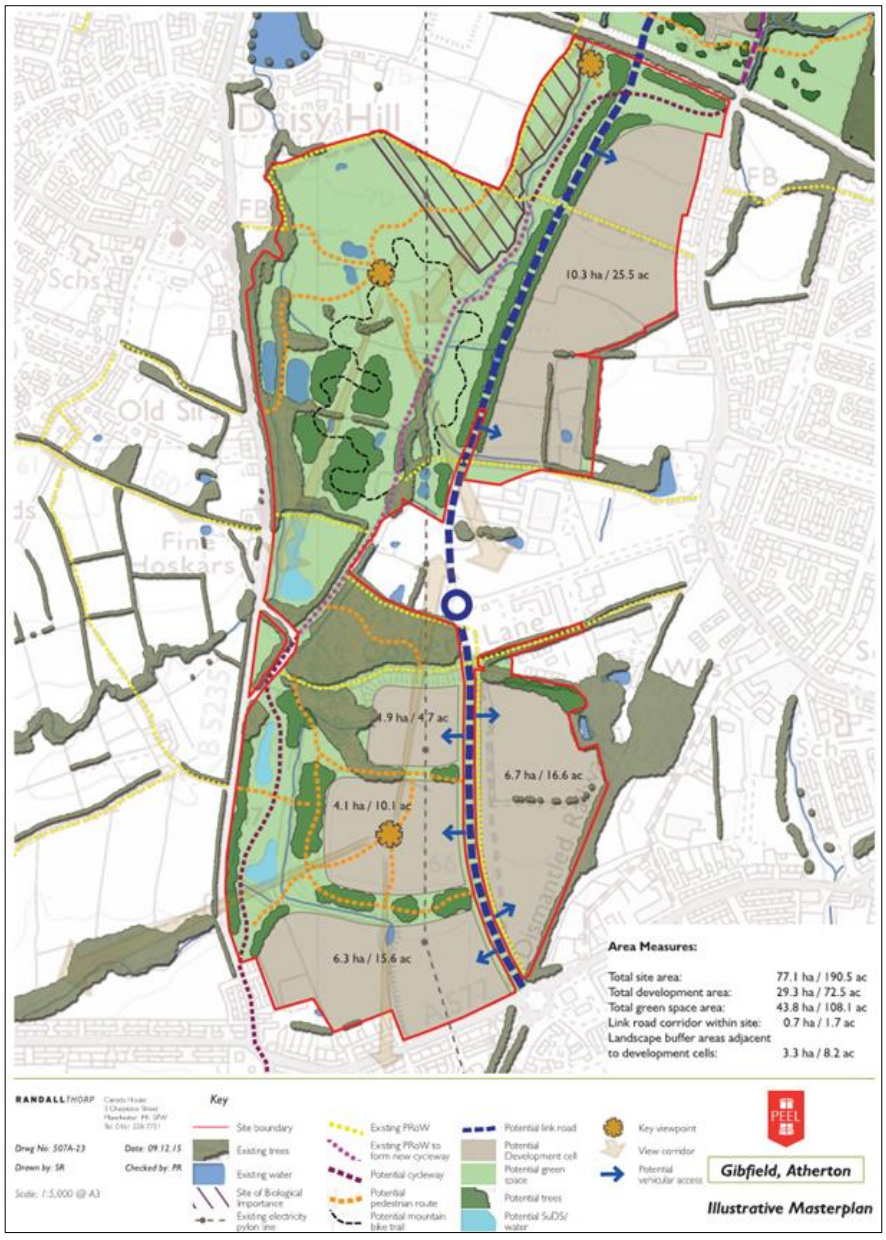

Figure 2 – Preliminary site masterplan

The figure below highlights key noise sources that could affect the site, including the central link road. These impacts would be considered further, in terms of how they would drive the use of certain areas of the site.

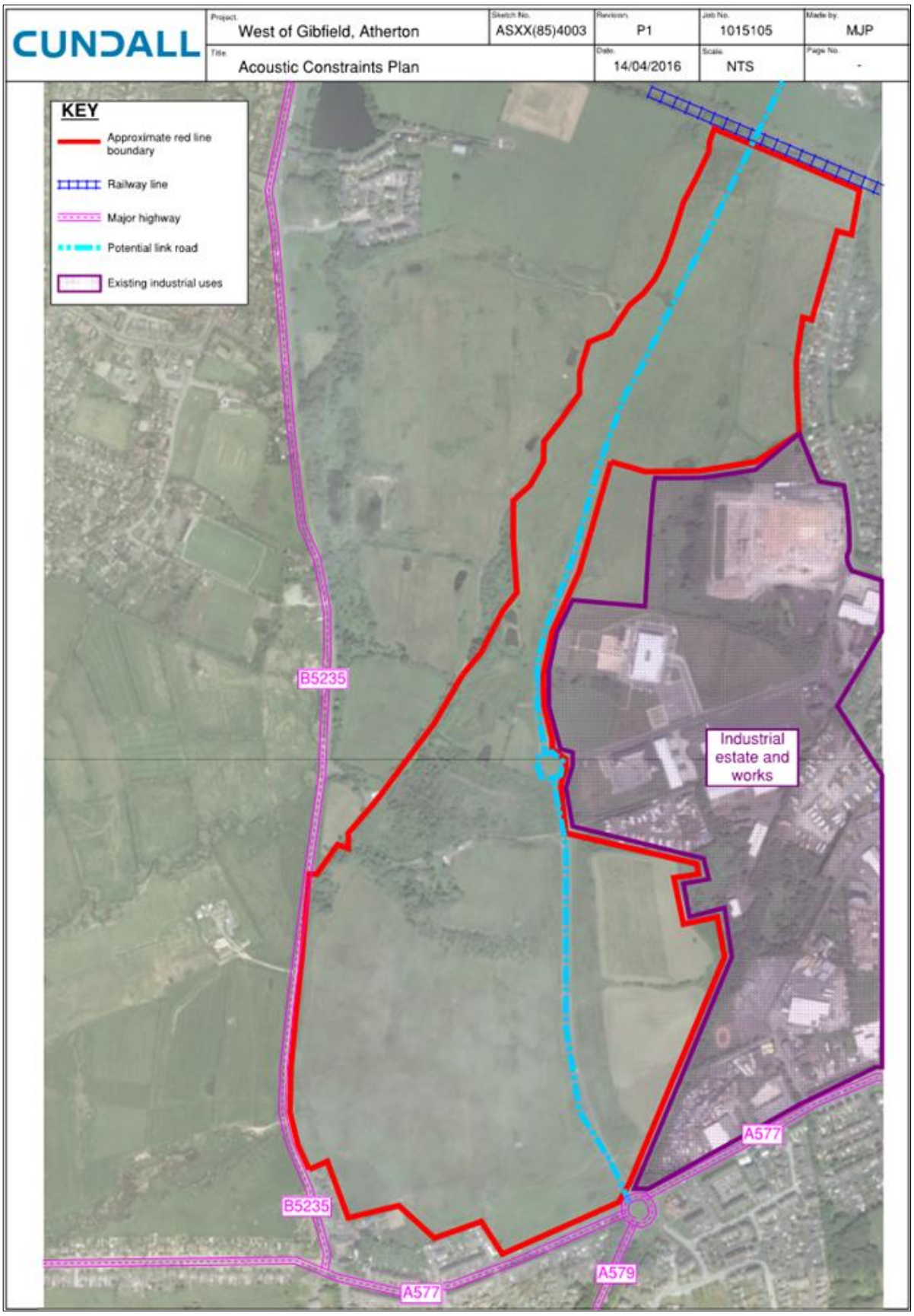

Figure 3 - Acoustic constraints plan

Key considerations are as set out below:

- Road traffic noise from the local road network;
- Rail traffic noise to the northern site boundary;
- Noise from the industrial estate to the immediate east of the site. It should be noted that the most significant source of noise within this industrial zone is likely to be Atherton Driving Test Centre, although this is not located immediately adjacent to the site boundary. Other existing operations include Stephenson Engineers Ltd (machined components and fabrication) and Kas Metal Trading Ltd (scrap metal recycling): these will need considering in detail. It may be necessary to incorporate a buffer zone and boundary mitigation (bunds / barriers) between residential development areas and this industrial operator to avoid constraining existing activities whilst protecting future residents from noise impacts. Alternative strategies could include the location of new employment use adjacent to these existing areas;
- Potential road traffic noise from new roads associated with any development.

Reviewing the DEFRA predicted noise mapping data presented[1] for road and rail sources indicates that the majority of the site is expected to be subject to prevailing average traffic noise levels of less than 55 dBA $L_{Aeq,16hr}$ (see figure below). This would be a positive indication that the area is appropriate for a residential use, although it is noted that this excludes contributions from the identified industrial operations.

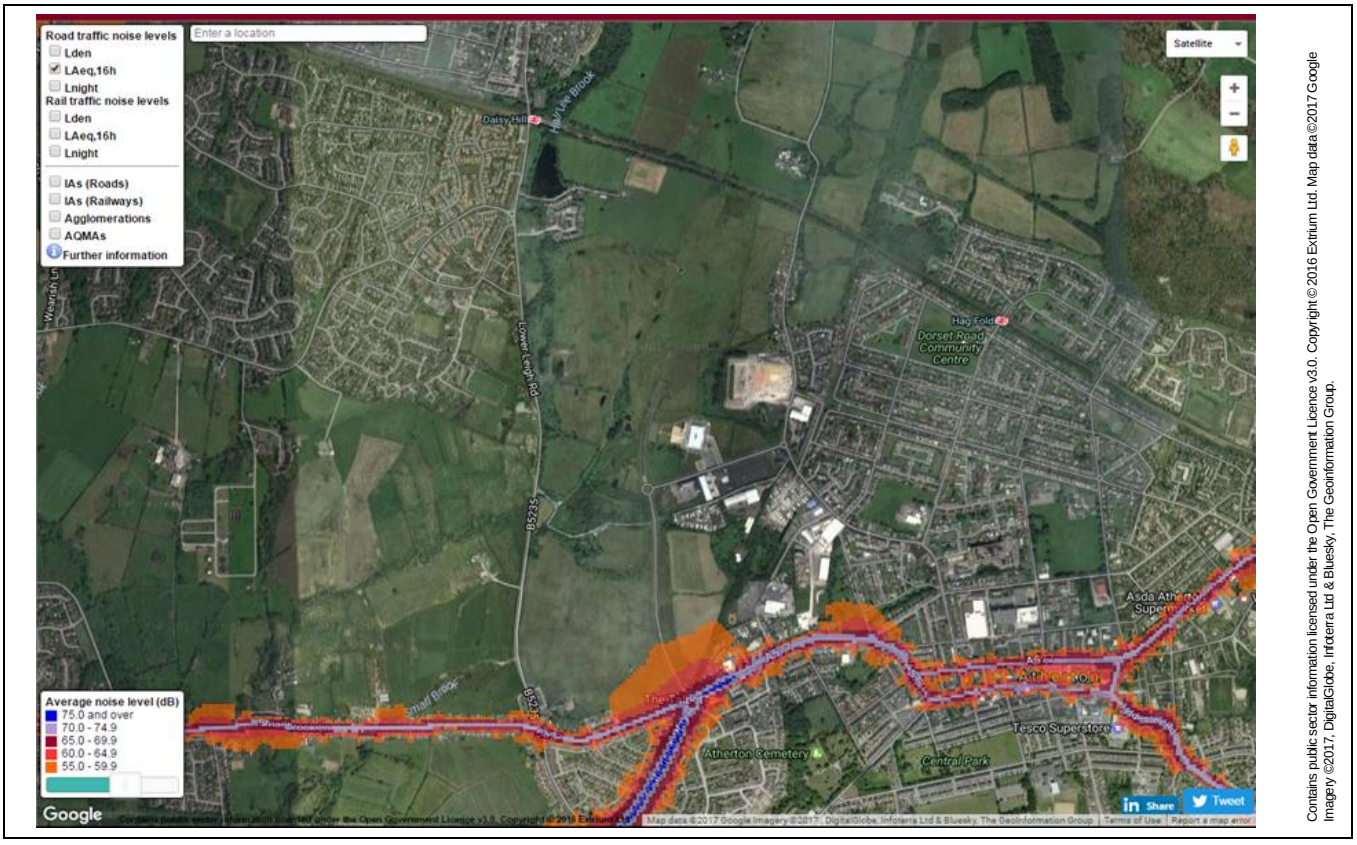

Figure 4 - Average road traffic noise impact

Predicted noise levels from the adjacent rail line are not plotted on the DEFRA maps, as the area is considered outside of main agglomerations, however from reviewing adjacent areas the average noise impact would be less than 55 dBA $L_{Aeq,16hr}$.

3.2 Key design considerations

Once the allocation of the site is approved in principle, key constraints and opportunities that are presented by the site can be identified and addressed. In addition to prevailing conditions from adjacent land uses, consideration would be

[1] Ref: http://www.extrium.co.uk/noiseviewer.html

given to the potential impacts of future developments such as new or expanded transport links and the incorporation of new employment uses.

Key constraints that need to be considered are outlined above; it is expected that the following strategies will need to be incorporated as designs progress:

- Provide a buffer zone between the rail line and noise-sensitive development cells;
- Provide a buffer zone and consider boundary mitigation between the existing industrial estate and noise-sensitive development cells (this could be in the form of new employment land use);
- Consider noise impact on residential frontages adjacent to existing local roads, develop appropriate room planning within dwellings and specify façade attenuation measures where required;
- Locate areas that are less sensitive to noise adjacent to existing industrial land-uses;
- Consider noise emissions from any new employment uses on existing noise-sensitive receivers that are located adjacent to the site.

However, it is not considered that there are any significant noise impacts on the assessment site, such that residential development and new employment uses would not be viable.

3.3 Design development

Further work on the outline masterplan would develop the location and inter-relationship of activities to minimise incompatible land use adjacencies as far as possible, and identify mitigation concepts that could be incorporated to reduce any associated noise impacts.

More detailed studies would focus on the orientation of façades and general layouts of dwellings to see that habitable rooms (such as bedrooms and living areas) can be located away from noise sources, or are buffered by other non-habitable spaces. The placement and use of public and private amenity spaces would also be considered at this stage, and the use of building massing to shield noise-sensitive areas established.

Potential design strategies associated with the inter-relationship of noise, ventilation, and overheating would be developed, focusing on the use of natural ventilation and other sustainable technologies where applicable.

3.4 Mitigation measures

Based on the constraints identified above, the following mitigation measures may be considered necessary. Concepts to incorporate within the developed masterplan scheme would include:

- Land use zoning and adjacencies;
- Green corridors and buffering zones between areas;
- Green barriers such as bunds and living walls;
- Natural ventilation strategies, incorporating passive attenuation measures where required;
- Building massing and orientation to limit noise propagation;
- Quiet facades and quiet courtyards;
- Building envelope attenuation measures, such as appropriate glazing systems.

By integrating a sustainable design approach, the benefits to future tenants (both residential and commercial) would be identified and used as positive marketing strategies for the site as a whole.

4 Conclusions

Considering acoustic impacts at an early stage in the masterplan process allows for a co-ordinated approach to be developed and design strategies to be implemented from the outset, whilst minimising impacts from incompatible adjacencies.

If the site is allocated for residential and employment development in principle, detailed acoustic assessments would be prepared and submitted alongside any future applications, demonstrating that any noise impacts can be adequately controlled.

Based on the assessment site's location and the existing adjacent residential land uses, it is considered that the typical design criteria for dwellings and Local Authority planning requirements should be achievable.

Key noise sources affecting the site have been identified, including the potential for new transport vectors within the site itself. It has been noted that new employment uses would also be considered in terms of noise emissions affecting any adjacent noise-sensitive areas.

It is considered that any noise impacts could be adequately controlled by use of appropriate mitigation measures and therefore there should be no significant issues which would prevent housing delivery across the site: in principle, the site is considered suitable for residential use and/or provision of new employment zones.

Appendices

Appendix I Noise assessment criteria

The assessment methodology adopted in this report has been based on Cundall's extensive experience of similar development sites and recommended criteria given in relevant British Standards and specific Local Authority policy, where applicable.

National Planning Policy Framework

The National Planning Policy Framework (NPPF) was originally published in March 2012 and amended in July 2018. The NPPF is part of government reform to make the planning system less complex and more accessible, and to promote sustainable growth. It replaces existing national planning policies such as Planning Policy Guidance PPG24: Planning and Noise.

The NPPF states:

"170 - Planning policies and decisions should contribute to and enhance the natural and local environment by;

*e) 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. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans;"*

and

"180 - 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 life;

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;"

National Policy Statement for England

The Noise Policy Statement for England (NPSE) was published by Defra in March 2010. This NPSE sets out the long-term vision of Government noise policy:

"Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development."

The NPSE long term vision is supported by the following aims:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *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."*

BS 8233:2014 and World Health Organisation Guidelines for Community Noise

Table 1 below shows recommended internal noise levels for residential dwellings, as prescribed in BS 8233:2014:

Area	Day Level (07:00 – 23:00 hrs)	Night Level (23:00 – 07:00 hrs)
Living Rooms	≤ 35 dB $L_{Aeq,16hour}$	N/A
Dining Rooms	≤ 40 dB $L_{Aeq,16hour}$	N/A
Bedrooms	≤ 35 dB $L_{Aeq,16hour}$	≤ 30 dB $L_{Aeq,8hour}$

Table 1 - BS 8233:2014 Internal ambient noise levels for dwellings

Within new residential developments, it is typical to set the design criteria such that the external building fabric can allow an internal night-time noise level of 30 dBA and daytime level of 35 dBA to be achieved, to provide a comfortable environment within habitable rooms (specifically bedrooms).

BS 8233:2014 also recommends that individual noise events at night can be disturbing to sleep patterns, and that a guideline level should be set in terms of SEL or L_{AFMax}. BS 8233 does not give a definitive level for internal maximum levels, or define an appropriate number of exceedances per night. However, the World Health Organisation's 'Guidelines for Community Noise' references a study by Vallet & Vernet, 1991, which concluded that:

"…for a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45 dB $L_{AF,max}$ more that 10-15 times per night."

BS 8233 also states that it is desirable that the steady noise level in external amenity areas (such as gardens or outdoor living areas) does not exceed 50 dB $L_{Aeq,T}$, with 55 dB $L_{Aeq,T}$ being acceptable in noisier environments. This is in line with recommendations given in the WHO Guidelines for Community Noise.

It would be typical to adopt such design targets when considering potential noise impacts on a new residential development.

However, in the period since the original issue of the WHO guidelines, the Government has set all English Local Planning Authorities specific five-year housing supply targets. This has placed greater emphasis on making efficient use of land resource earmarked for residential development. BS 8233:2014 recognises this, and states that it should be accepted that these values are not achievable in all circumstances where development would be otherwise desirable. The document goes on to suggest that in areas such as city centres, or urban areas adjoining the transport network, a compromise (between elevated external noise levels and ensuring development needs) is warranted.

Local Authority criteria – Wigan Council

The Wigan Local Plan Core Strategy was adopted in September 2013. It is the strategic local plan for the borough. It sets out the spatial vision through to 2026 and a range of strategic objectives and policies.

Specific noise criteria or assessment values are not identified, however the document notes[2] that:

"The decline in industry has also reduced sources of noise pollution, which has been countered in many respects by noise from road traffic. The adverse impacts of noise are becoming more widely recognised and low noise road surfacing, acoustic fencing and insulation to properties against external noise are becoming more commonplace."

Strategic noise mapping

Defra has published strategic noise map data that give a snapshot of the estimated noise from major road and rail sources across England in 2012. The data was developed as part of implementing the Environmental Noise Directive.

[2] Ref: Section 9.109.

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