



Reference: Welwyn Hatfield Borough Council's submitted Local Plan – Site Allocations

Project No: 2019402

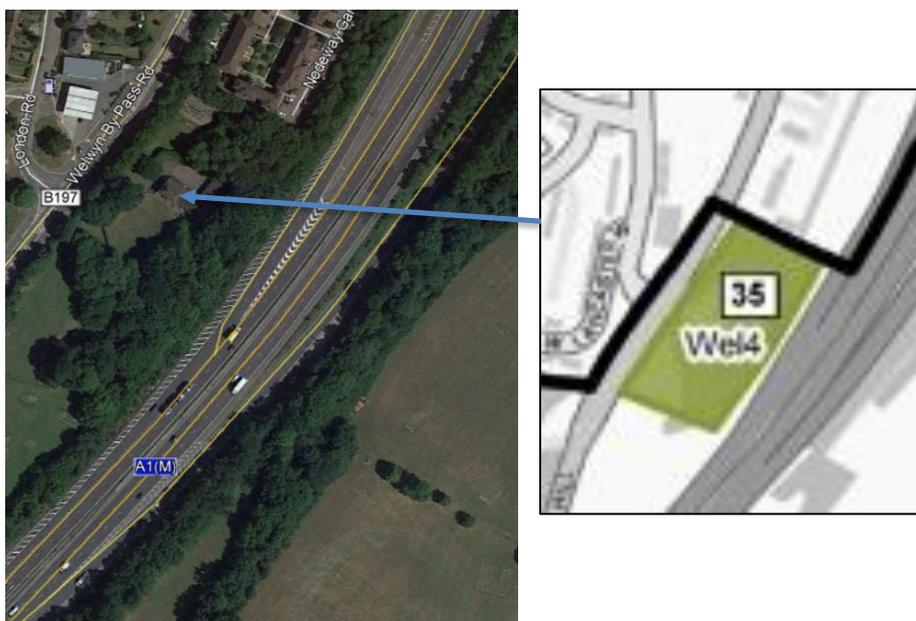
Date: 21st April 2020

Technical note

1.0 Introduction

Sharps Redmore has been instructed by King & Co to carry out an acoustic review of the suitability of the site known as Wel4 for residential development. The site is shown in Figure 1 below:

FIGURE 1: Location of site



The site is currently undeveloped and is located to the Wel4 is to the south of Welwyn village, and is immediately adjacent to the A1(M), which forms the eastern boundary of the site. Immediately to the north of the site is a residential development, which is understood was granted planning consent between 2005-2010. To the south of the site is open countryside, whilst the western boundary if formed by the Welwyn By-Pass beyond which is predominantly residential.

SR understands that the site is being promoted for 30 houses. An indicative layout is shown in Appendix A to this note

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In terms of noise the main impact is noise from the road traffic on the A1(M). The purpose of this note is to consider the impact of road traffic noise on the proposed residential development. The note considers current noise policy and guidance.

2.0 Assessment Methodology and Noise Guidance

National Policy

The National Planning Policy Framework (NPPF), February 2019, sets out the Government's planning policies for England and "these policies articulate the Government's vision of sustainable development." In respect of noise, Paragraph 180 of the NPPF states the following:

"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; and*
- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation".*

Guidance on the interpretation of the policy aims contained within the NPPF is contained within National Planning Policy Guidance (NPPG). The NPPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the NPPG is summarised in the table below:

TABLE 1: Noise Exposure Hierarchy

Perception	Examples of Outcomes	Increasing Effect Level	Action
Not noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
		Lowest Observed Adverse Effect Level	
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
		Significant Observed Adverse Effect Level	
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

The NPPF and NPPG reinforce the March 2010 DEFRA publication, “Noise Policy Statement for England” (NPSE), which states three policy aims, as follows:

“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.”*

Together, the first two aims require that no significant adverse impact should occur and that, where a noise level which falls between a level which represents the lowest observable adverse effect and a level which represents a significant observed adverse effect, then according to the explanatory notes in the statement:

“... all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur.”

Local Policy

With regard to local policy reference is made to Policy SADM18 ‘Environmental Protection’ of the draft local plan which in terms of noise states the following:

Noise and Vibration

A Noise and Vibration Impact Assessment will be required for proposals with the potential to cause disturbance to people or the natural environment due to noise and/or vibration and for proposals that are considered to be sensitive to noise and/or vibration.

Proposals that would result in or be subject to noise pollution and/or vibration that is:

- i. Very disruptive and would have an unacceptable adverse effect on human health or the natural environment will not be permitted.
- ii. Disruptive and would have a significant adverse effect on human health or the natural environment will be refused unless the need for, and benefits of, the development significantly outweigh the harm and all feasible solutions to avoid and mitigate that harm have been fully implemented.
- iii. Intrusive and would have an adverse effect on human health or the natural environment will be resisted unless the need for, and benefits of, the development outweigh the harm and all feasible solutions to avoid and mitigate that harm have been fully implemented.

Unlike existing local policy, the draft plan does not include any supplementary planning guidance on the impact of noise on sensitive developments. In the absence of any design guidance in either national or local policy, SR has considered the guidance contained within the following documents.

National Design Advice

BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.

The current nationally recommended internal noise levels for dwellings are given in BS 8233:2014 'Guidance on Sound Insulation & Noise Reduction for Buildings'. BS 8233 recommends the following internal noise standards:

TABLE 2: Guideline noise values

BS 8233:2014 Table 4 – Indoor ambient noise levels for dwellings			
Activity	Location	0700 to 2300	2300 to 0700
Resting	Living room	35 dB L _{Aeq,16hour}	-
Dining	Dining room/area	40 dB L _{Aeq,16hour}	-
Sleeping (daytime resting)	Bedroom	35 dB L _{Aeq,16hour}	30 dB L _{Aeq,8hour}

Unlike the previous version (1999) of BS 8233 there is no longer a L_{AMAX} standard for bedrooms in BS 8233. However, footnote 4 to Table 4 states that *“Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or L_{Amax,F} depending on the character and number of events per night. Sporadic noise events could require separate values.”* In this case, it is proposed that the previous BS8233 internal standard (also referenced in World Health Organisation Guidelines for Community Noise) is applied. This is 45 dB L_{AMAX}, inside bedrooms.

For outdoor areas (i.e. balconies), BS 8233:2014 recommends that “it is desirable that the external noise level does not exceed 50 dB L_{AeqT}, with an upper guideline value of 55 dB L_{AeqT}” However, the document recognises that that these guideline values are not achievable in all circumstances and in higher noise areas, a compromise might be warranted. In such circumstances, development should be designed to achieve the lowest practicable levels in these external amenity spaces.

ProPG: Planning and Noise – New Residential Development

The ProPG professional practice guidance on planning and noise has been jointly produced by the Chartered Institute of Environmental Health (CIEH), Institute of Acoustic (IOA) and Association of Noise Consultants (ANC).

The ProPG recommends a 2-stage approach; an initial assessment which identifies the risk of noise on the proposed planning application, and where the results indicate that noise requires further consideration a full assessment in the form of an Acoustic Design Statement (ADS) which would include four key elements as follows:

- Element 1 – demonstrating a “Good Acoustic Design Process”;
- Element 2 – observing internal “Noise Level Guidelines.”
- Element 3 – Undertaking an “External Amenity Area Noise Assessment”
- Element 4 – Consideration of “Other Relevant Issues.”

The advice contained within ProPG is based on the policy objectives contained within the NPPF and the objective noise guidelines within BS 8233:2014.

Local Guidance

Current local design guidance can be found in Welwyn Hatfield District Plan Supplementary Design Guidance (February 2005) which refers to the guidance in Planning Practice Guidance Note (PPG24) on Planning and Noise.

Although now revoked following the introduction of the NPPF the guidance in PPG 24 is useful in determining the suitability of a site for residential use and recommended the use of noise exposure categories (NEC) for new dwellings near existing noise sources. These are given for day and night periods in terms of $L_{Aeq16hr}$ and L_{Aeq8hr} noise levels respectively. The noise limits for each category in respect to road traffic noise are given below:

TABLE 3- PPG 24 – Noise Exposure Categories (NEC)

Noise levels corresponding to the Noise Exposure for New Dwellings $L_{Aeq,T}$ dB					
		Noise Exposure Category			
Noise Source	Hours	A	B	C	D
Road Traffic	07:00 -23:00	<55	55 - 63	63 - 72	>72
	23:00 – 07:00	<45	45 - 57	57 - 66	>66

Each category contains the following advice with respect to noise.

NEC A: Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as a desirable level.

NEC B: Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection against noise.

NEC C: Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.

NEC D: Planning permission should normally be refused.

3.0 Existing Noise Levels

To determine the suitability of the site measurements of existing noise levels would be carried out to determine/predict noise levels across the site. However due to current restrictions on travel as result of the Coronavirus Crises this has not been possible as traffic levels are not considered representative of normal conditions. Therefore in accordance with the advice produced jointly by the Institute of Acoustics (IoA) and Association of Noise Consultants (ANC) SR has used noise mapping produced by residential use SR has used national strategic noise maps produced by Extrium, <http://www.extrium.co.uk/noiseviewer.html>, on behalf of the DEFRA. These maps are based on traffic levels in 2017. Figures 2 and 3 shown the existing noise levels over the WEL4 site. The noise maps for the Wel4 are shown in Figure 2 and 3 below.

FIGURE 2: Wel4 – Daytime LAeq16hr noise levels

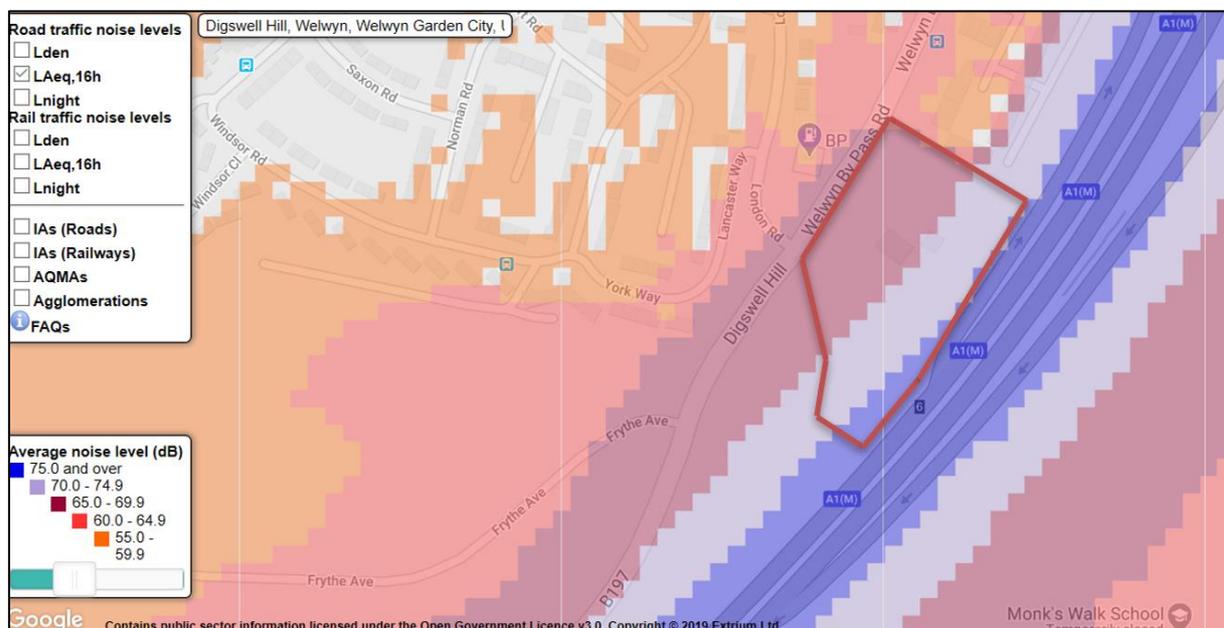
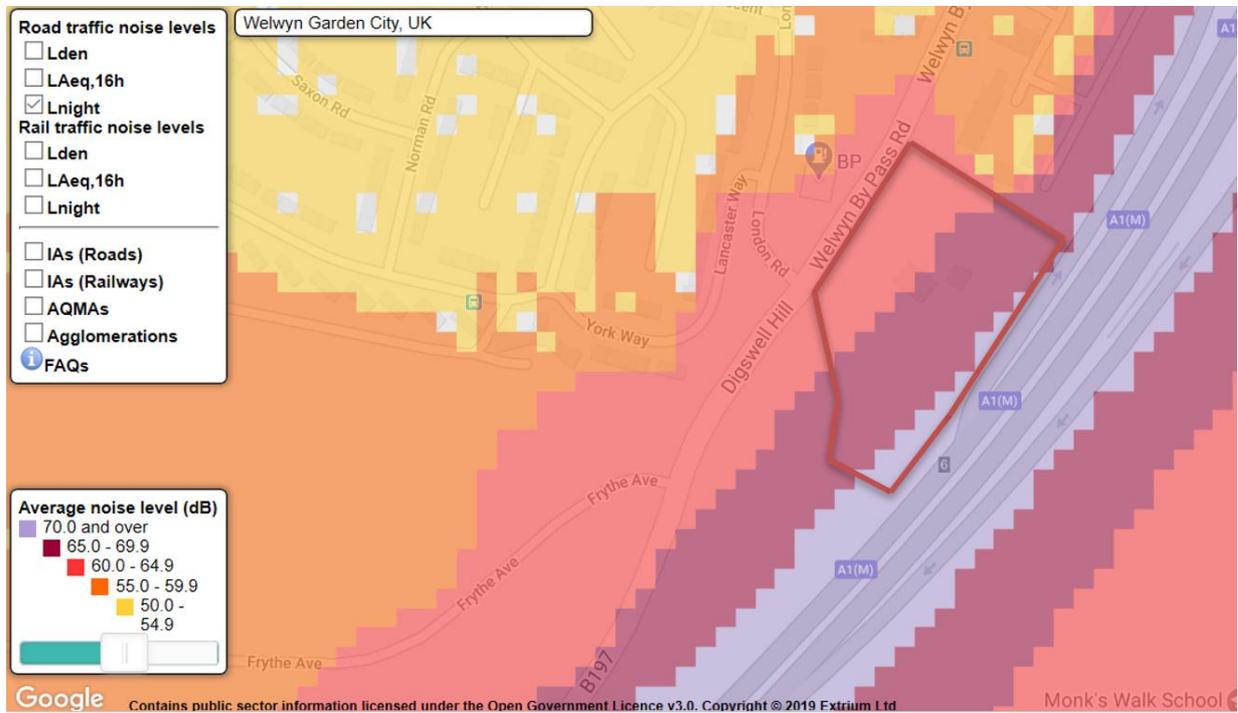


FIGURE 3: Wel4 – Night Time Noise levels



4.0 Assessment of suitability of the site for residential use

Considering the existing noise levels determined above SR has assessed the suitability of the site against the three main methods discussed in section 2.0 of this note.

BS 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings.

For areas between 65 and 75 dB it will be necessary to have specialised acoustic systems to achieve acceptable internal noise levels. This will require windows to be closed and therefore mechanical ventilation and cooling will have to be provided.

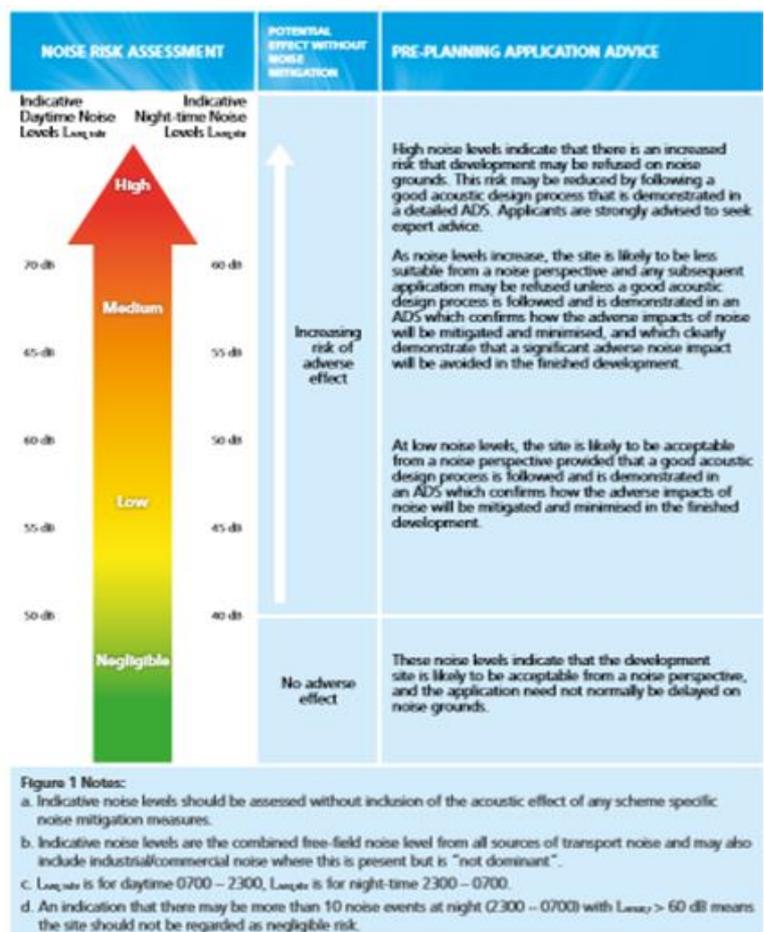
With regard to external noise levels, BS 8233:2014 recommends an upper limit of daytime noise levels in gardens of 55 dB $L_{Aeq16hr}$ however ideally noise levels should be below 50 dB.

Whilst screening can be provided it is unlikely that any acoustic barrier or screening provided through the design of the site will reduce noise levels by more than 15 dB. It is therefore likely that noise levels within gardens will still exceed the upper threshold of 55 dB.

ProPG: Planning and Noise – New Residential Development

This professional guide provides guidance on impact of transportation noise on residential developments. It is a two-stage approach: an initial assessment based on the open site which identifies the potential risk of noise on the site, and a second detailed stage which looks at the mitigation measures available through the design of the development. Based on the Figure below the initial assessment indicates that the site will be high risk during the day and night time period. The advice in the guidance for high risk sites is

“High noise levels indicate that there is an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS.”



Planning Practice Guidance (PPG) 24 – Noise and Planning

Although now revoked, PPG 24 is still referred to in current local supplementary planning guidance. Based on the mapped noise levels the site would be within NEC C and NEC D. The advice for such sites is as follows:

NEC C: Planning permission should not normally be granted. Where it is considered that permission should be given, for example because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.

NEC D: Planning permission should normally be refused.

5.0 Summary and Conclusions

Having assessed the suitability of the site against the three main objective assessment methods it is considered that noise from road traffic on the A1(M) will be a significant constraint on the future development of the site for residential use.

To meet suitable internal noise levels, it will be necessary to have specialist acoustic measures incorporated into the design of the site, which will require windows to be closed, to control noise. This will result in potential over-heating issues.

With regard to external noise levels, even considering mitigation measures that can be incorporated into the design of the site it is likely that external noise levels will exceed the upper threshold for outdoor amenity space.



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Appendix A: Indicative Layout

Appendix B: Institute of Acoustics/Association of Noise Consultants – Impact of COVID-19 on the Practicality and Reliability of Baseline Sound Level Surveying and the Provision of Sound & Noise Impact Assessments

Appendix A

Indicative Layout

Appendix A



NOTES

1. SITE AREA

1.62 hectares (2.42 acres)

2. HOUSING MIX

Market Mix	HA	HA
1 bed 2p apartment	60m ²	4
2 bed 4p apartment	70m ²	4
2 bed 4p house	80m ²	4
3 bed 5p house	90m ²	6
Total		18

Affordable	GA	HA
1 bed 2p apartment	60m ²	4
2 bed 4p apartment	70m ²	4
Total		8

Overall Total	HA
	26

4. AFFORDABLE HOUSING
 Welwyn Hatfield Council requires minimum 30% of open dwellings to be affordable.
 Total no. of dwellings on site = 26 resulting in 10 dwellings.
 Provision: 10 dwellings.

5. DENSITY
 Welwyn Hatfield Council supports Lifetime Homes and requires an overall proportion of dwellings to be LHM compliant.
 All proposed dwellings are Lifetime Homes compliant.

6. CAR PARKING
 To comply with Welwyn Hatfield Parking Standards Requirement:
 • 1 bedroom dwellings: 1.20 spaces
 • 2 bedroom dwellings: 1.5 spaces
 • 3 bedroom dwellings: 2.25 spaces
 • Inclusive of vehicle parking
 • Total = 12 spaces

Provision:
 • 120m² - 12 spaces
 • Inclusive of access parking

7. LANDSCAPE
 Proposed retained used to comply with Hertfordshire County Council Health & Horticulture Design Guide 2010/11.

8. BASIS OF SITE PLAN
 This drawing is based upon Terrain Survey Ltd 1:500 scale topographical survey, drawing No. TD15-43391, dated November 2013.

- Proposed Trees
- Existing Trees
- Road Protection Area

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PROJECT TITLE
**SANDYHURST
 WELWYN**

DRAWING TITLE
 Site Layout
 Option 3

SCALE 1:500	DESIGN JH	CHECKED JB
	DATE FEB 15	DATE FEB 15
PROJECT NO. 8301	DRAWING NO. SK014	

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Appendix B

Institute of Acoustics/Association of Noise Consultants



Joint Guidance on the Impact of COVID-19 on the Practicality and Reliability of Baseline Sound Level Surveying and the Provision of Sound & Noise Impact Assessments

By the Association of Noise Consultants [ANC] and the Institute of Acoustics [IOA]

Version 3

Containing latest Government Guidance and Links to Noise Mapping and other data sources

16th April 2020

Introduction

The level of concern across the United Kingdom in relation to the spread of the COVID-19 means that there is now forced home working, along with restricted travel arrangements being enforced by the Government.

With regard to the provision of Sound and Noise Impact Assessments, many Members of the ANC and IOA, are finding their normal work practices impacted, such that even where opportunities to work from home exist, it will not be 'business as usual'. Nevertheless, there will be a continuing requirement to maintain as far as possible the standard of our working practices, and also to maintain the flow of acoustic reporting which has an important role in the fabric and functioning of society. Acoustic reports are utilized for many purposes including to assist planning applications, the discharge of planning conditions and the implementation of Building Regulations. Continuing to provide high quality acoustic reporting in a timely manner for scrutiny by regulators and decision makers will allow the important aspects of planning to continue to move forward to support our society in the longer term beyond this national emergency.

As the responsible bodies, the ANC and IOA are keen to ensure that it is 'business as usual', as far as is practicably possible and responsible; not only to support continued on-going financial stability for our members, but also for the myriad strands of society that rely on our reports and input to projects. With the very tight limitations on travel for all, we recognize that there will have to be changes to the manner in which acoustic assessment and reporting is carried out. We have, therefore, recommended below some changes in working practices in the production of such reports. In so doing, it is still important to minimize uncertainties when determining baseline conditions, in a clear and transparent way. Furthermore, by good communication between those preparing the reports and those that will be reviewing them, the planning process (and other relevant processes) will be able to continue as smoothly as possible, without what could be a delay of many months.

We consider that by implementing these measures the provision of Sound and Noise Impact Assessments will be able to continue in a timely manner.

Competence

Site surveys should only take place if they can be carried out in complete accordance with current Government requirements. Instead, as set out below, alternative methods of characterising baseline conditions may be used. Acoustics professionals are skilled in understanding how best to use those techniques so that the outcome is representative and

the conclusions drawn are technically robust, so that clients and decision-makers can come to well-informed judgements.

Baseline Sound Level Characterisation

Before the most recent restrictions, the COVID-19 outbreak presented new challenges in obtaining representative baseline sound levels because typical road, air and rail transport usage have been reduced by travel restrictions and social distancing measures. Other sound sources may also have been affected – for example, due to changes in operating patterns at industrial and commercial premises. However, now that site visits cannot routinely occur, other approaches may have to be taken to establish an appropriate robust estimate of baseline conditions, such as using existing data (for example, from previous local surveys and noise maps) or undertaking baseline sound predictions. These approaches can be supplemented by additional limited on-site sound level measurements, where permitted. The most appropriate option to use must be determined on a case-by-case basis, assessing the level of uncertainty and including this information in the reporting. Most importantly at this time, before progressing with any methodology, there should be discussion of the intended approach with the relevant regulating authority.

Methodology

For some projects there will be similar challenges when determining the sound levels associated with the development. Where permitted, site visits to understand the sound environment will assist the professional in understanding the sources contributing to the sound environment, and where these may not be typical due to current circumstances. Any such site visits would need to comply with any restrictions on movement and ensure that social distancing is embedded within the site visit methodology.

For transport schemes, there will have to be a reliance on predicted sound levels to describe the baseline conditions, with a corresponding need to source flow/activity data. There are now many sources of transport data available and these should be used, where possible, along with previously made direct site measurements to describe baseline conditions. Links to data obtained from the most recent Noise Mapping carried out by the four devolved administrations and the Republic of Ireland are shown in the Appendix. Also shown are links to some road transport data sources.

Where sound from existing facilities is needed to inform future noise levels, or where it is the existing sound that is being assessed, enquiries will be needed to understand whether or not the facility is running as normal. Discussions with other operators may be needed to understand whether nearby facilities are operating normally, and whether any changes might affect sound emissions. Examples may include where the BS4142 methodology is being used to assess the impact from an industrial / commercial facility following complaints, or where existing machinery needs to be measured to use as a reference for predicted future levels.

The acoustics professional will need to consider whether alternative sources of information in respect of sound levels can reasonably be used. Where appropriate, a case should be made regarding why the proposed alternative methods are suitable for a robust assessment, and should clearly set out the estimated uncertainties in the assessment. In cases relating to the investigation of complaints it may not be possible to carry out any form of site measurement

at the moment, regardless of whether the conditions are representative of normal activities. Therefore, this type of assessment is likely to have to be postponed.

As with the determination of baseline conditions, discussions with the relevant regulators, who may be able to provide vital local knowledge, will be key.

Liaison with Regulators and Decision Makers

Liaison between acoustics professionals and relevant regulators is especially important during this period where characterising environmental sound climates cannot be undertaken in the conventional way. It is recognised that projects should be assessed on a case by case basis. A pragmatic approach may be needed with regard to the information required for planning applications and/or the discharge of planning conditions. Having said that, it will continue to be important that such assessments remain robust, and follow current good practice.

One outcome may be that supplementary information will be required at a later date or controlled by condition to allow planning authorities to maintain momentum in the planning system during this period.

Latest Government Guidance

The Chartered Institute of Ecology and Environmental Management received advice from the Government last week. Reference was made to the guidance set out here:

<https://www.gov.uk/government/publications/guidance-to-employers-and-businesses-about-covid-19/guidance-for-employers-and-businesses-on-coronavirus-covid-19>

The advice went on to state:

Ecologists and environmental professionals should therefore be able to continue with outdoor work, including ecological surveying and supervision, where they can continue to follow Public Health England guidelines.

Detailed advice for outdoor work can be found at:

<https://www.gov.uk/guidance/social-distancing-in-the-workplace-during-coronavirus-covid-19-sector-guidance#outdoor-businesses>

Work that does not require travel, such as desk-based surveys and report writing, should be completed from home where possible.

We recognise that the cessation of environmental survey works would risk causing later delays in the development sector.

Clearly, therefore, there is an acknowledgement by Government that for businesses to continue, there is a need for outdoor monitoring work to occur **as long as it can be done safely**. However, as mentioned above, if the purpose of the monitoring is to determine typical conditions, it must be remembered that current conditions are far from typical.

Summary

In summary, we are experiencing extremely unusual conditions but yet, it is essential that we continue to exercise our professional skills diligently and cope with these changed circumstances. Some of the advice contained in this guidance is not new, and all professionals have probably had to cope previously with unusual circumstances from time to time in their day to day life. It is just that, at the moment, every day presents an unusual situation.

It is important that decision making and associated development continue, including the planning process and the discharge of planning conditions. But it is also important to avoid poor decisions being made because the highest standard of acoustic assessment was not maintained during these challenging times.

The Association of Noise Consultants

The Institute of Acoustics

APPENDIX Noise Mapping Data

The strategic noise mapping covers the major sources of transportation noise within large urban agglomerations and along road and rail corridors between them and was designed to provide a global view of noise exposure in line with the requirements of the Environmental Noise Directive for reporting above 55 dB L_{den} and 50 dB L_{night} . It does not include all possible noise sources, or all urban areas in the UK and Ireland, however it may help to provide an initial screening for sites in the vicinity of the mapped sources.

Links have been included for downloading the results in GIS format, plus an online map viewer

England

Data: <https://www.gov.uk/government/publications/strategic-noise-mapping-2019>

Maps: <http://www.extrium.co.uk/noiseviewer.html>

Northern Ireland

Data: <https://www.opendatani.gov.uk/dataset/environmental-noise-directive-noise-mapping>

Maps: <https://apps.daira-ni.gov.uk/noisemapviewer/index.html>

Scotland

Data: <http://map.sepa.org.uk/atom/Noise.atom>
http://map.sepa.org.uk/atom/NOISE_ROUND3.atom

Maps: <https://noise.environment.gov.scot/noisemap/>

Wales

Data: <https://lle.gov.wales/catalogue/item/EnvironmentalNoiseMapping2017/?lang=en>

Maps: <http://extrium.co.uk/walesnoiseviewer.html>

Republic of Ireland

Data: <http://gis.epa.ie/GetData/Download>

Maps: <https://gis.epa.ie/EPAMaps/>

Acknowledgement: With thanks to Simon Shilton (Acustica) for supplying this information.

Transport Data Sources

Department for Transport

<https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints>

Highways England

<http://webtris.highwaysengland.co.uk/>