

Greyfriars Church, Reading

Noise Assessment

Report 18/0717/R1

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Greyfriars Church

Friar St
Reading
RG1 1EH

Revision	Description	Date	Prepared	Approved
0	1 st Issue	5 March 2019	Adam Sharpe	Lee Montague
1	Revision 1	17 April 2019	Lee Montague	Josh Palmer

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Attachments

Glossary of Acoustic Terms

18/0717/SP1

Site plan illustrating unattended measurement and assessment positions.

18/0717/TH01 & TH02

Time history graphs illustrating unattended measurement results.

Appendix A

Planning guidance.

 End of Section



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1 Introduction

- 1.1 It is proposed to re-develop and extend parts of the existing church at the existing Greyfriars Church site in Reading. The main worship hall is to remain, without significant changes, but a new entrance lobby area is to be provided to the west, as well as rebuilt extensions to existing properties at Nos 2 and 4 Sackville Street (to provide toilet facilities).
- 1.2 Cole Jarman have been instructed to review the potential of noise disturbance to nearby noise sensitive properties.
- 1.3 This report sets out the results of a noise survey conducted at the site and noise limits are set for any potential future mechanical services plant equipment.

2 Site Description

2.1 Existing Site

- 2.1.1 The site, located at Friar Street, Reading, RG1 1EH, sits on the corner of Friar Street and Greyfriars Road and features a large 14th century church and a two storey community centre building on the western and eastern sides of the site respectively. The central area of the site is occupied by its car park.
- 2.1.2 The area to the north of the site is occupied by a mixture of two and three storey residential terraces either side of Sackville Street. The property on the southeastern end of Sackville Street bordering the site (nos 2 and 4) are also occupied by the Church, and is also intended to be renovated as part of the redevelopment works.
- 2.1.3 Beyond Friar Street to the south of the site sits a large three storey department store premises on the corner of Cheapside and Friar Street, with associated loading bay to the west, beyond which are several mixed use properties featuring ground floor commercial units with two storeys of residential properties above.
- 2.1.4 The area to the east of site across Greyfriars Road is occupied by a large six storey student accommodation premises above a ground floor commercial unit, beyond which are several more substantial mixed use properties along Friar Street.
- 2.1.5 The site's western extent borders the A329 and its junction connecting the dual carriageway to Friar Street and Chatham Street beyond the highway to the west.
- 2.1.6 Due to the site's close proximity to the A329, traffic around the site is typically regular, with vehicles regularly stopped along Friar Street due to several crossings in the immediate vicinity of the site.
- 2.1.7 The site falls within the jurisdiction of Reading Borough Council.



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2.2 Proposed Layout & Usage

- 2.2.1 The proposed site layout is to see a new foyer and lobby areas which are replacing the existing church building 'social space' and kitchen; so will still provide a buffer from the main worship hall to external areas as the existing accommodation does presently.
- 2.2.2 Due to the extent and purpose of the main church worship space not changing as part of these redevelopment works, it is not expected that the character and frequency of worship music performances and practices are to change following the completion of the redevelopment.
- 2.2.3 With the new foyer / lobby providing the same buffer to the main worship space, noise breakout from the proposed new church entrance lobby / foyer are not expected to be significant. These areas have therefore not been assessed in terms of noise emission, as they are replacing existing accommodation with the same function; such activity being an established part of the site and noise climate in the community.
- 2.2.4 The new accommodation as part of the extension of nos. 2 and 4 Sackville Street will not include any spaces that might facilitate significant noise generating activity. Therefore, there is highly unlikely to be any significant noise impacts to existing residents from general activity associated with any part of the re-development.
- 2.2.5 The new extensions though will include some minor mechanical ventilation plant equipment to serve the new toilets. The following elements of the report set out the existing noise climate and noise limits that any new equipment will adhere to.

3 Noise Survey

3.1 Methodology & Instrumentation

- 3.1.1 In order to establish the existing noise climate in the vicinity of the site, an unattended noise survey was undertaken at the site between 1130 hours on Thursday 10th January and 1145 hours on Monday 14th January 2019.
- 3.1.2 Measurements of noise levels were taken from positions on the flat roof areas of the Church building and existing Greyfriars centre. These have been illustrated in attached site plan 18/0717/SP1 and are described below:
- MP1: Roughly 1.2m above the northern flat roof area of Greyfriars Church;
 - MP2: Roughly 4m above the central flat roof area of the Greyfriars centre, overlooking the residential properties to the north on Sackville Street.
- 3.1.3 These positions were selected to quantify existing noise levels from the local noise climate, most notably traffic noise from the A329, as well as representative noise levels at the nearest residences to the site, immediately to the north on Sackville Street.



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- 3.1.4 Measurements of the L_{Aeq} , L_{Amax} , L_{A10} and L_{A90} indices were recorded over consecutive 15-minute periods for the duration of the survey using the equipment listed within table T1 (see attached Glossary of Acoustic Terms for an explanation of the noise units used).

Item	Manufacturer	Type
Sound Level Analyser (x2)	Rion	NL-52
Acoustic Calibrator (x2)	Rion	NC-74
Weatherproof windshield (x2)	Rion	WS-15

T1 Equipment used during unattended noise survey.

- 3.1.5 The microphones were fitted within weatherproof enclosures, and the sound level meters calibrated before and after the survey in order to confirm an acceptable level of accuracy. No significant drift was noted to have occurred.
- 3.1.6 The weather conditions when setting and collecting up the noise monitoring equipment were overcast and cold with dry roads and some breeze. These conditions are deemed acceptable and are not considered to have affected measurement results.

3.2 Results

- 3.2.1 The results of the unattended noise measurements are presented in attached time history figures 18/0717/TH01 & TH02 for positions MP1 and MP2 respectively.
- 3.2.2 The noise climate perceived on-site was noted to be dominated by traffic noise from the nearby A329. Some distant construction noise was noted during collection of the unattended survey, thought to be emanating from the north/west.
- 3.2.3 It is understood that the current church site has some bearing on the existing noise climate during services; however, as this is forms an existing use, this can be considered as a defining characteristic of the established noise climate.
- 3.2.4 The representative background noise levels recorded during the day and night time measurement hours during the survey duration are set out in table T2 below:



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Location	Representative Background Noise Level, dB(A)	
	Daytime (0700-2300 only)	Night time (24-hour)
MP1 – Greyfriars Church flat roof	55	43
MP2 – Existing Greyfriars centre flat roof	54	44

T2 Representative measured background noise levels, L_{A90} .

4 Planning Guidance

4.1 National Guidance

- 4.1.1 There is general planning guidance in terms of noise set out in national planning documents such as the National Planning Policy Framework (NPPF), Noise Policy Statement for England (NPSE) and advice is also contained within published Planning Practice Guidance (PPG). The attached Appendix A sets out the details of these policies and standards.
- 4.1.2 The national guidance does not contain specific technical criteria to achieve and one must therefore consider other references and sources applicable to this scheme.
- 4.1.3 Based on the site's current operations, it is expected that the main potential noise source from the proposed Phase 1 development would be from future plant to serve the new toilets.
- 4.1.4 In terms of noise emissions from any potential new mechanical services, guidance can be found in BS4142:2014. Details of this standards are included in the attached Appendix A.

4.2 Local Authority Requirements

- 4.2.1 The site falls within the jurisdiction of Reading Borough Council. Policy DM4 of the council's Local Development Framework: Detailed Policies document sets out the authority's requirements regarding the safeguarding of residential amenity, stating the following:

'Development will not cause a significant detrimental impact to the living environment of existing or new residential properties, in terms of:

...

Noise and Disturbance'

- 4.2.2 Additionally, in more specific terms of pollution (to mechanical service plant emissions), policy 'CS34: Pollution and Water Resources' notes:



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*‘Development will only be permitted where it would not be damaging to the environment through air, land, **noise** or light pollution.’*

4.2.3 It continues:

*‘Proposals for development that are sensitive to the effects of air, **noise** or light pollution will only be permitted in areas where they will not be subject to high levels of such pollution, unless adequate mitigation measures are provided to minimise the impact of such pollution.’*

4.2.4 In lieu of any quantifiable guidance, we consider the criteria set out above and in Appendix A in terms of BS 4142 to be suitable when considering the aims of the above noted policies.

5 Mechanical Services Plant Noise Limits

- 5.1 The likelihood of an adverse noise impact from fixed items of plant at any nearby residential buildings can be assessed based on guidance contained in BS4142:2014. Details of BS4141 are contained in attached Appendix A.
- 5.2 We understand that the local authority typically recommends that plant noise at existing residences should be designed to a rating level 10dB below the existing representative L_{A90} background noise levels recorded during the relevant time period.
- 5.3 Taking in to account the guidance set out above, and the representative background noise levels measured during the course of our unattended noise survey, the plant noise emission limits to apply at all nearby existing residential receptors are as follows:

Location	Noise Emission Limit, dB	
	Daytime (0700-2300 only)	Night time (24-hour)
Nearby residential receivers represented by MP1	45	33
Nearby residential receivers represented by MP2	44	34

T3 Plant noise emission limits at the nearest residential properties.

- 5.4 Any future mechanical services plant equipment will be cumulatively designed to the above noted limits to nearby noise sensitive receivers, as assessed in accordance with BS4142:2014. With a commitment to adopt the above limits, all local and national policies in relation to potential noise disturbance will be met.



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6 Conclusions

- 6.1 It is proposed to re-develop and extend parts of the existing church and associated buildings at the existing Greyfriars Church site in Reading. The main worship hall is to remain, but a new entrance lobby area is to be provided as well as re-built extensions to 2 and 4 Sackville Street.
- 6.2 No new significant noise generating activities are proposed to operate as part of the redevelopment works and the new entrance lobby will still provide the same degree of 'buffer' to potential noise breakout from the existing worship hall.
- 6.3 There may be potential for new mechanical service plant equipment to be installed to serve the proposed new toilet facilities.
- 6.4 Cole Jarman have conducted an environmental noise survey on site in order to quantify the existing noise climate. The results of this survey have been used to set external plant noise emission limits.
- 6.5 With any new plant equipment to be cumulatively designed to the noise limits noted in the report, the requirements of local and national planning policy in terms of noise will be met for the proposed phase 1 development.

 End of Section



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Glossary of Acoustic Terms

L_{Aeq} :

The notional steady sound level (in dB) which over a stated period of time, would have the same A-weighted acoustic energy as the A-weighted fluctuating noise measurement over that period. Values are sometimes written using the alternative expression dB(A) L_{eq} .

L_{Amax} :

The maximum A-weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise when occasional loud noises occur, which may have little effect on the L_{Aeq} noise level. Unless described otherwise, L_{Amax} is measured using the “fast” sound level meter response.

L_{A10} & L_{A90} :

If non-steady noise is to be described, it is necessary to know both its level and degree of fluctuation. The L_{An} indices are used for this purpose. The term refers to the A-weighted level (in dB) exceeded for n% of the time specified. L_{A10} is the level exceeded for 10% of the time and as such gives an indication of the upper limit of fluctuating noise. Similarly L_{A90} gives an indication of the lower levels of fluctuating noise. It is often used to define the background noise.

L_{A10} is commonly used to describe traffic noise. Values of dB L_{An} are sometimes written using the alternative expression dB(A) L_n .

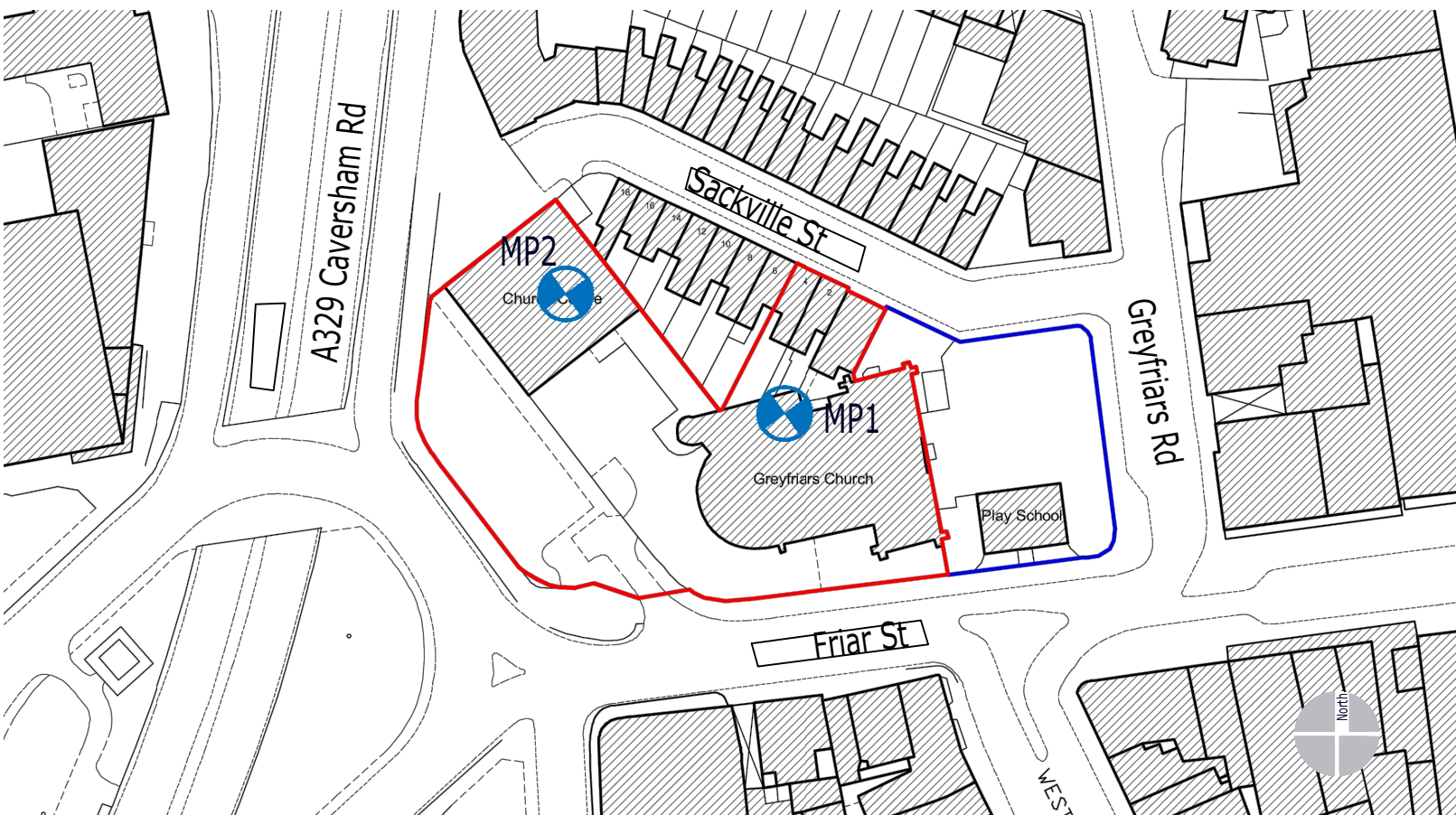
L_{AX} , L_{AE} or SEL

The single event noise exposure level which, when maintained for 1 second, contains the same quantity of sound energy as the actual time varying level of one noise event. L_{AX} values for contributing noise sources can be considered as individual building blocks in the construction of a calculated value of L_{Aeq} for the total noise. The L_{AX} term can sometimes be referred to as Exposure Level (L_{AE}) or Single Event Level (SEL).

■ End of Section

Figure 18/0717/SP1

Title: Site plan illustrating unattended measurement and assessment positions



Project: Greyfriars Church, Reading

Date: March 2019

Scale: Not to scale



Figure 18/0717/TH01

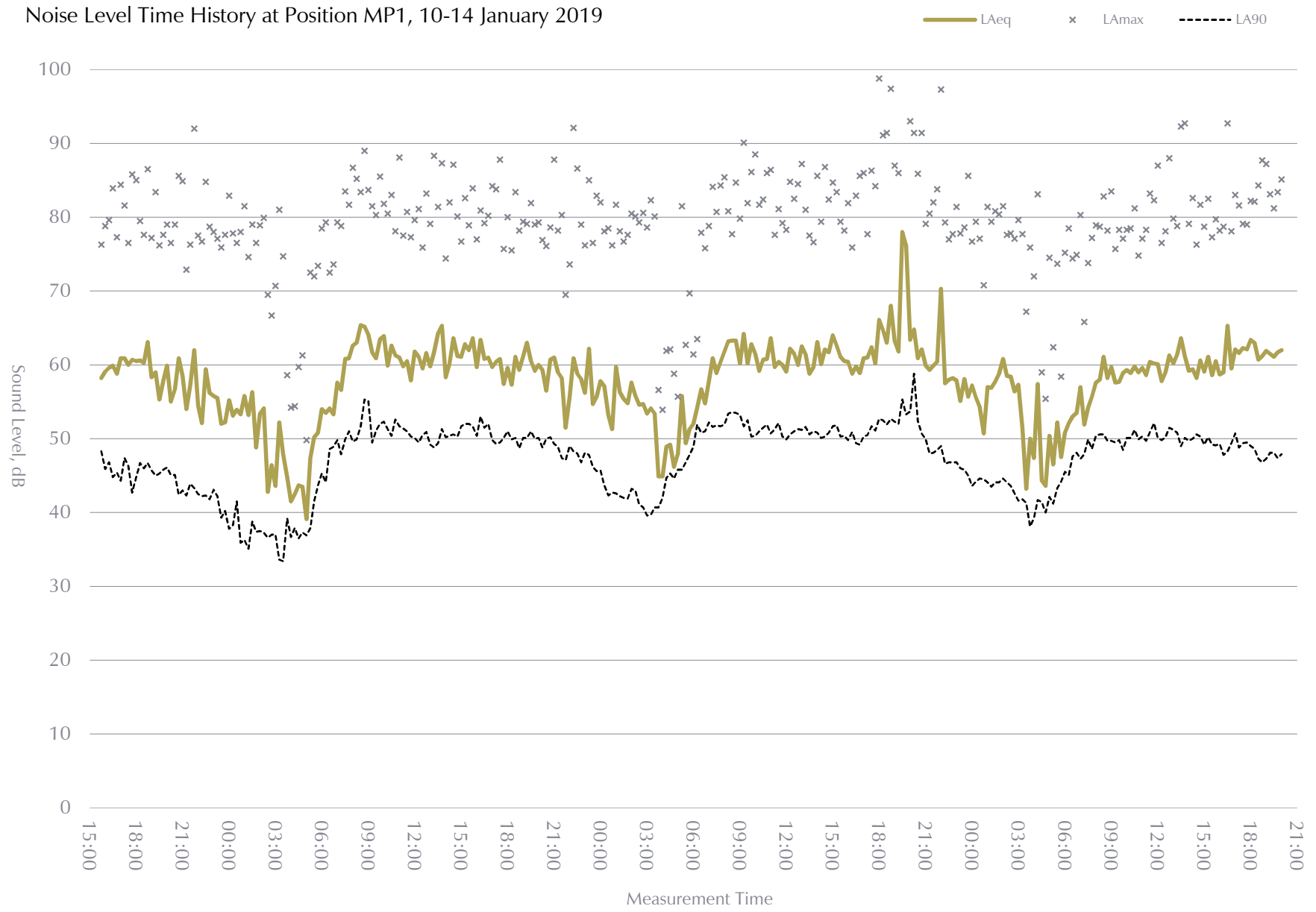
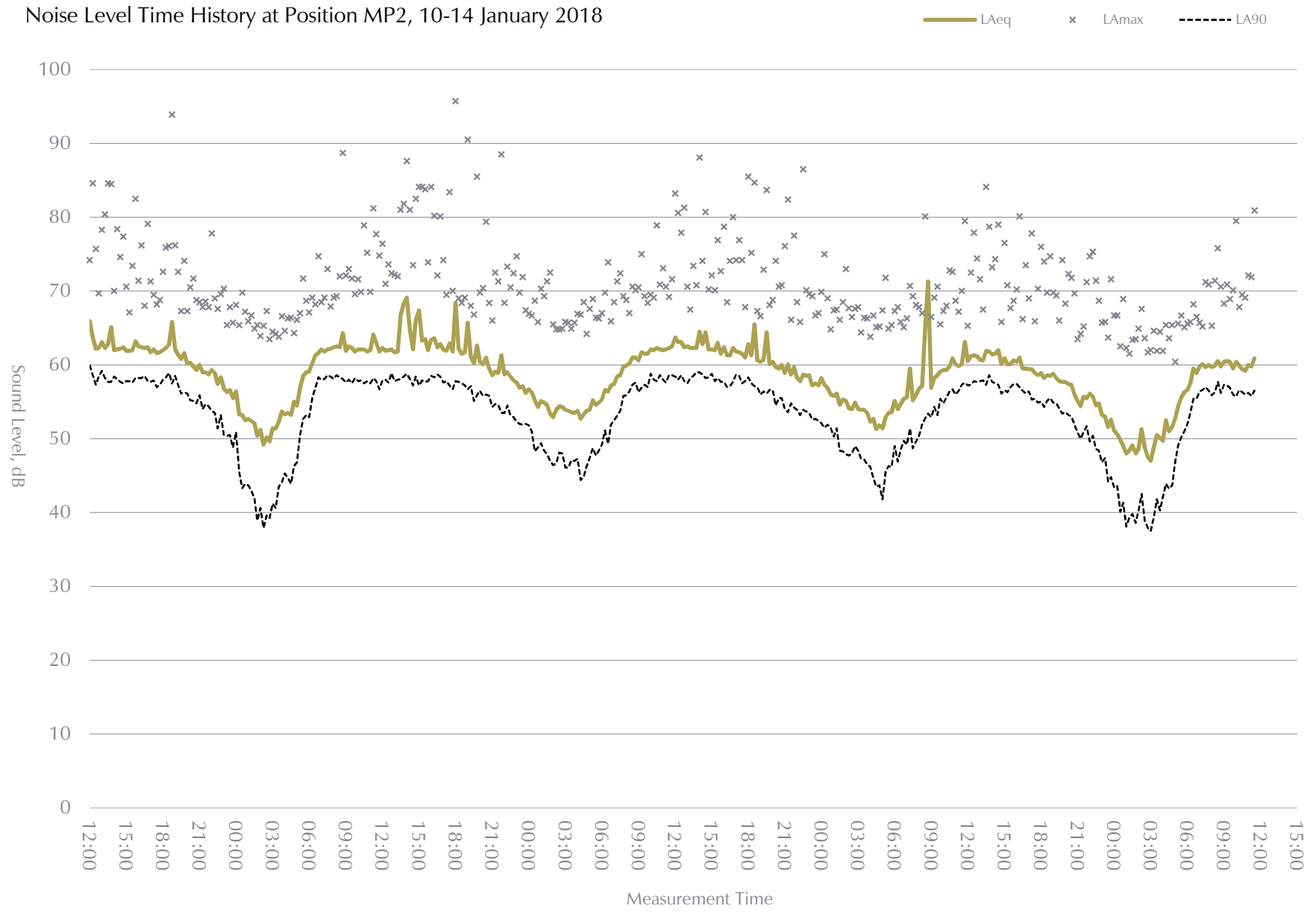




Figure 18/0717/TH02





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Appendix A

Planning Guidance

National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF), published in March 2012 and updated in February 2019, is currently the relevant document for defining the national policy toward noise sensitive development. It refers to the Noise Policy Statement for England (NPSE), which is discussed in the subsequent section.

The current policy on sustainable development influences the emphasis of any noise assessment. The development of a quiet, rural site is by most measures less sustainable than the development of a site located near existing infrastructure and facilities. The rating of development sites based on prevailing noise levels should reflect this.

Specifically, on the subject of noise, paragraph 180 of NPPF states:

“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;”

Paragraph 180 references the Noise Policy Statement for England and no other particular standards.

On the general issue of amenity, paragraph 127 states that planning policies and decisions should ensure that developments:

“create places that [...] promote health and well-being, with a high standard of amenity for existing and future users...”

Further to this, paragraph 170 states that planning policies and decisions should:

“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”



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A notable inclusion since the July 2018 edition of NPPF is the 'agent of change' principle in paragraph 182. In terms of noise, this principle requires that those proposing a new noise sensitive development incorporate sufficient mitigation such that the operation of existing premises in the area is not unreasonably restricted in order to control noise impact upon the new development:

"Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed."

Noise Policy Statement for England (NPSE)

- 6.1.1 This NPSE does not set quantitative guidelines for the suitability of development in an area depending on the prevailing levels of noise. Absent, therefore, is reference to specific noise thresholds which determine whether noise sensitive or noise generating development is suitable and, if so, whether particular mitigation factors need to be considered.

Instead, the NPSE sets out three aims:

The first aim of the Noise Policy Statement for England

"Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development."

The second aim of the Noise Policy Statement for England

"Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development."

The third aim of the Noise Policy Statement for England

"Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development."

Paragraph 2.24 states that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life. It also states that this does not mean that such adverse effects cannot occur.



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In essence, therefore, each development site must be judged on its ability to deliver on each of the stated aims. Quantifying the prevailing noise levels is therefore an essential first step in assessing a given site.

The NPSE refers to SOAEL, the Significant Observed Adverse Effect Level. This is defined as the level above which significant adverse impacts on health and quality of life can be observed. Given the overall thrust of the NPSE, the SOAEL is therefore an important assessment standard although the document also comments that:

"It is not possible to have a single objective noise based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times."

Attention is drawn to the fact that the SOAEL is the level above which significant adverse effects can be observed. Importantly, it should be noted that the overall objective is to avoid or minimise significant adverse impacts; some degree of impact is acceptable and it is not necessary to seek to achieve no impact at all.

Planning Practice Guidance (PPG)

The Department for Communities and Local Government 'Planning Practice Guidance' (PPG) was published on 6 March 2014.

The PPG on Noise expands upon the NPPF and NPSE and sets out more detailed guidance on noise assessment. Like the NPPF and NPSE, the guidance does not include any specific noise levels but sets out further principles that should underpin an assessment.

- 6.1.2 Part ID30 of the PPG gives guidance on the relevance of noise to a planning decision. Paragraph 003 (ID: 30-003-20140306) states that decision taking should take account of the acoustic environment and in doing so consider the degree of effect associated with the proposal.

The PPG includes a section on noise, which states:

"Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:

whether or not a significant adverse effect is occurring or likely to occur;

whether or not an adverse effect is occurring or likely to occur; and

whether or not a good standard of amenity can be achieved."



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It then refers to the NPSE and states that the aim is to identify where the overall effect of the noise exposure falls in relation to Significant Observed Adverse Effect Level ¹ (SOAEL), the Lowest Observed Adverse Effect Level ² (LOAEL) and the No Observed Effect Level ³ (NOEL).

The guidance then presents a table, which is reproduced as table T4 overleaf. The implication of the final line of the table is that only the 'noticeable and very disruptive' outcomes are unacceptable and should be prevented. All other outcomes (i.e. all other lines in the table) can be acceptable, depending upon the specific circumstances and factors such as the practicalities of mitigation.

Under the topic of further considerations relating to mitigating the impact of noise on residential developments (paragraph 009; ID: 30-009-20140306) the PPG states that the noise impact may be partially off-set if residents of affected dwellings have access to:

- *a relatively quiet facade (containing windows to habitable rooms) as part of their dwelling, and/or;*
- *a relatively quiet external amenity space for their sole use, (e.g. a garden or balcony). Although the existence of a garden or balcony is generally desirable, the intended benefits will be reduced with increasing noise exposure and could be such that significant adverse effects occur, and/or;*
- *a relatively quiet, protected, nearby external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings, and/or;*
- *a relatively quiet, protected, external publically accessible amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within a 5 minutes walking distance).*

This is not to say that access to the above items is mandatory, rather that it can help to offset any noise impacts.

¹ The level of noise exposure above which significant adverse effects on health and quality of life occur.

² The level of noise exposure above which adverse effects on health and quality of life can be detected.

³ The level of noise exposure below which no effect at all on health or quality of life can be detected.



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Effect Level (increasing)	Perception	Examples of Outcomes	Action
<i>No Observed Effect</i>	Not noticeable	No effect	No specific measures required
NOEL (<i>No Observed Effect Level</i>) <i>No Observed Adverse Effect</i>	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 specific measures required
LOAEL (<i>Lowest Observable Adverse Effect Level</i>) <i>Observed Adverse Effect</i>	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 minimum 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.	Mitigate and reduce to a minimum
SOAEL (<i>Significant Observed Adverse Effect Level</i>) <i>Significant Observed Adverse Effect</i>	Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, 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.	Avoid
<i>Unacceptable Adverse Effect</i>	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.	Prevent

T4 Summary of Noise Exposure Hierarchy (from PPG).

Plant Noise

BS 4142:2014

Regarding noise impact from a commercial or industrial source, BS 4142:2014 provides an assessment methodology and criteria relating to:



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- a) sound from industrial and manufacturing processes;
- b) sound from fixed installations which comprise mechanical and electrical plant and equipment;
- c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and
- d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.

The application of the standard is detailed below:

“This standard is applicable to the determination of the following levels at outdoor locations:

- a) rating levels for sources of sound of an industrial and/or commercial nature; and*
- b) ambient, background and residual sound levels,*

for the purposes of:

- 1) investigating complaints;*
- 2) assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and/or commercial nature; and*
- 3) assessing sound at proposed new dwellings or premises used for residential purposes.”*

Therefore, where onsite commercial/industrial activity is concerned, the approach taken is in accordance with BS 4142:2014. The rating level of noise from the facility is calculated, over a set time period, at each of the nearest noise sensitive locations. This rating level is then compared with the existing background sound level.

The standard recommends the following reference time period T_r over which the specific sound should be evaluated, for each of the day and night periods:

$T_r = 1$ hour during the day; and

$T_r = 15$ minutes during the night.

The standard states that daytime is typically between 07:00h and 23:00h. Accordingly, night-time is between 23:00h and 07:00h.

The reason for the shorter night time assessment period of 15 minutes is identified in the standard as follows:

“The shorter reference time interval at night means that short duration sounds with an on time of less than 1 h can lead to a greater specific sound level when determined over the reference time interval during the night than when determined during the day.”



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The rating level of noise for the assessment periods, L_{A,r,T_r} is the calculated noise level at the nearest receiver location, adjusted depending on the acoustic characteristic of the noise source. Adjustment factors are based on any tonality, impulsivity, intermittency and other sound characteristics present in the resultant noise level at the receiver position. The level or appropriateness of any penalty will depend both on the type of noise source and the context in which it is perceived. Similarly, in accordance with BS 4142, the period of time for which an individual noise source is active during the relevant reference time period will also be considered in establishing the rating level.

The rating level, including appropriate correction factors, will be considered and applied to each source and receiver path individually. The total rating level can then be calculated.

It will also be necessary to consider the existing noise climate and what sound sources contribute to it. For example, where a noise generating activity is proposed adjacent to an existing identical noise generating site, the impact of the new noise source would be less than if it were to be planned in a location where its character and type is different to and more noticeable than any existing noise source nearby.

With regard to the background sound level against which the rating level is compared, the standard states the following:

"In using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the particular circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods."

The periods of interest over a 24-hour day are usually related to day time activities (07:00-23:00h) and night time (23:00-07:00h). However the standard makes the following statement:

"Among other considerations, diurnal patterns can have a major influence on background sound levels and, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night-time period for sleep purposes. Furthermore, in this general context it can also be necessary to separately assess weekends and weekday periods."

Therefore, the periods of time which are typically considered 'waking up' and 'falling asleep' stages, for example 06:00h to 07:00h and 23:00h to 24:00h, may need to be considered independently. Alternative periods may also be identified where breakdown beyond the standard day and night time analysis will be necessary, for example where background sound levels are shown to be regularly elevated. Similarly both weekend and weekday periods may need to be considered separately, with criteria set for both. The requirement to analyse specific time periods will be considered for each site individually.

Once the rating level at each receptor has been calculated, reference can be made to the following commentary in BS 4142 in relation to assessing the impact, based on the difference between the rating level of the noise source and the pre-existing background sound level.



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- a) Typically, the greater this difference [between industrial site noise rating level and baseline background level], the greater the magnitude of the impact.
- b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.
- d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

It can be seen that the likelihood of a significant adverse impact occurs once the rating level is at least 10 dB greater than the representative background sound level (depending on context).

In addition to the above, BS 4142 also states:

“For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.

Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.”

A rating level of 30 dB is typically considered a lower limit for design criteria; background levels below 30 dB and rating levels below 35 dB are considered ‘very low’ in BS 4142:1997. Where the existing background level is considered low, the aim would typically be to achieve a rating level of 30 dB.

 End of Section

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