

Report

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TEMPLE

LEADERS IN ENVIRONMENT,
PLANNING & SUSTAINABILITY.

Report for – Ridge & Partners LLP
T4039-Harts Farm Way
Noise Assessment Report

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1.0 Introduction

Temple have been appointed to undertake a noise impact assessment report to support planning for a proposed B2 development at land to the north of Harts Farm Way. This involved undertaking an attended noise survey of the existing noise at nearby residential receptors and the setting of limits based on the background noise survey results for the operational noise of the proposed B2 use development.

Included in this report are; the relevant local and national noise policies, results of the noise survey undertaken on 06 March 2018 and noise limits for noise output of the proposed development derived from the results of the noise survey.

2.0 Planning Policies, Standards and Guidance

2.1 National Policy

2.1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)¹ was introduced by the Department of Communities and Local Government in March 2012. The document sets out the Government's planning policies for England and how these are expected to be applied.

The planning system is required to contribute to and enhance the natural and local environment. Consequently, the aim is to prevent both new and existing development from contributing to or being put at unacceptable risk from noise, or being adversely affected by unacceptable levels of noise pollution.

Therefore planning policies and decisions should aim to:

- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;
- Mitigate and reduce to a minimum other adverse impacts on quality of life arising from noise from new development, including through the use of conditions;
- Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and
- Identify and protect areas of tranquillity that have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

2.1.2 Noise Policy Statement for England

The Noise Policy Statement for England (NPSE)² seeks to clarify the underlying principles and aims in existing policy documents, legislation and guidance that relate to noise. The statement applies to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise.

The statement sets out the long-term vision of the government's noise policy, which is to *"promote good health and a good quality of life through the effective management of noise within the context of policy on sustainable development"*.

The guidance promotes the effective management and control of noise, within the context of Government policy on sustainable development and thereby aims to:

- 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 improvements of health and quality of life.

¹ Department for Communities and Local Government, (March 2012): 'National Planning Policy Framework'.

² Department for Environment, Food and Rural Affairs, (March 2010): 'Noise Policy Statement for England'.

The statement adopts established concepts from toxicology that are currently being applied to noise impacts. The concept details noise levels, at which the effects of an exposure may be classified into a specific category. The classification categories as detailed within NPSE are as follows:

- No Observed Effect Level (NOEL) - the level below which no effect can be detected. Below this level no detectable effect on health and quality of life due to noise can be established;
- Lowest Observed Adverse Effect Level (LOAEL) - the level above which adverse effects on health and quality of life can be detected; and
- Significant Observed Adverse Effect Level (SOAEL) - the level above which significant adverse effects on health and quality of life occur.

It is recognised that SOAEL does not have a single objective noise-based level that is applicable to all sources of noise in all situations and therefore the SOAEL is likely to be different for different sources, receptors and at different times of the day.

No guidance has been issued at the time of writing to identify the SOAEL and LOAEL for typical noise sources and receptors.

2.1.3 Planning Practice Guidance Noise

The Planning Practice Guidance (PPG)³ expands on the use of SOAEL: “If the exposure is above this level the planning process should be used to avoid this effect occurring, by use of appropriate mitigation such as by altering the design and layout. Such decisions must be made taking account of the economic and social benefit of the activity causing the noise, but it is undesirable for such exposure to be caused.”

The PPG also goes on to identify unacceptable noise exposure: “*At the highest extreme, noise exposure would cause extensive and sustained changes in behaviour without an ability to mitigate the effect of noise. The impacts on health and quality of life are such that regardless of the benefits of the activity causing the noise, this situation should be prevented from occurring.*”

2.2 Standards and Guidance

2.2.1 British Standard 8233

British Standard 8233 (BS 8233:2014)⁴ provides information on the design of internal acoustics in buildings. Table 1 provides a design range for the Indoor ambient noise levels for a typical situation.

Table 1 – Indoor ambient noise levels in space when they are unoccupied and privacy is also important

Objective	Typical situations	Design range dB $L_{Aeq,T}$
Typical noise levels for acoustic privacy in shared spaces	Open plan office	45 – 50

³ Department for Communities and Local Government, (March 2014): ‘Planning Practice Guidance’.

⁴ British Standards Institute (BSI), (2014): ‘BS 8233 – Guidance on sound insulation and noise reduction for buildings’, BSI, London.

2.2.2 British Standard 4142 – Methods for Rating and Assessing Industrial and Commercial Sound

British Standard 4142 (BS 4142:2014)⁵ describes methods to use outdoor sound levels to assess the likely effects of sound of an industrial and/or commercial nature on people who might be inside or outside a dwelling or premises used for residential purposes upon which the sound is incident.

The standard requires determination of the following:

- Rating level - $L_{Aeq,Tr}$ sound level produced by the specific sound source at the assessment location with any adjustment added to the specific sound level if a tone, impulse or other acoustic characteristic occurs, or is expected to be present.
- Background sound level, $L_{A90,T}$ – A-weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T.

T_r is the reference time interval over which the specific sound level is determined. This is 1-hour for daytime (07:00-23:00 h) and 15-minutes for night-time (23:00-07:00 h).

An estimate of the impact of the specific sound generated can be obtained by subtracting the measured background sound level from the rating level, and the following is considered:

- a) Typically, the greater this difference, 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.

All pertinent factors should be taken into consideration when assessing the impact, including the following:

- 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.
- The character and level of the residual sound compared to the character and level of the specific sound.
- The sensitivity of the receptor.

⁵ British Standard Institute (BSI), (2014): 'BS 4142 – Methods for rating and assessing industrial and commercial sound', BSI, London.

2.2.3 British Standard 7445 – Description and Measurement of Environmental Noise

Part 1: Guide to Quantities and Procedures

British Standard 7445 Part 1 (BS 7455-1:1991)⁶ defines the basic quantities to be used for the description of noise in community environments and describes basic procedures for the determination of these quantities.

The methods and procedures described in this British Standard are intended to be applicable to sounds from all sources, individually and in combination, which contribute to the total noise at a site.

Part 2: Guide to the Acquisition of Data Pertinent to Land Use

British Standard 7445 Part 2 (BS 7455-2:1991)⁷ describes methods for the acquisition of data which provide descriptors that enable:

- a) a description of the environmental noise in a specified area of land to be made in a uniform way;
- b) the compatibility of any land use activity or projected activity to be assessed with respect to existing or predicted noise.

Using the data as a basis, authorities may establish a system for selecting the appropriate land use, as far as levels of noise are concerned, for a specified area, or the sources of noise - existing or planned - which are acceptable with respect to land use, existing or planned.

2.3 Local Planning Policy Havant Borough Council

Policies CS16 (part 1.(e)) and DM10 are the most relevant to local noise policy. The relevant parts taken from the Havant Borough Core Strategy March 2011 are quoted below.

“DM10 Pollution

Development that may cause pollution of water, air or soil or pollution through noise, smell, smoke, fumes, gases, steam, dust, vibration, light, heat, electromagnetic radiation and other pollutants will only be permitted where all of the following relevant criteria can be met:

1. The health and safety of existing and future users of the site, or nearby occupiers and residents is not put at risk.
2. National air quality standards or objectives would not be breached.
3. The water environment would not be detrimentally affected.
4. It would not lead to an unacceptable deterioration in the quality or potential yield of coastal, surface and ground water resources.
5. External lighting is of the minimum level of illumination and duration required for security and operational purposes.

⁶ British Standards Institute (BSI), (1991): 'BS 7445 – Description and Measurement of Environmental Noise. Part 1: Guide to Quantities and Procedures'. BSI, London.

⁷ British Standards Institute (BSI), (1991): 'BS 7445 – Description and Measurement of Environmental Noise. Part 2: Guide to the Acquisition of Data Pertinent to Land Use'. BSI, London.

6. External lighting would not interfere with safe navigation in either Chichester or Langstone Harbours and other coastal locations.”

“Policy CS16 High Quality Design

Planning permission will be granted for development that is designed to a high standard, which helps to create places where people want to live, work and relax. All development should demonstrate that its design:

1. Responds to, draws inspiration from and respects local context and:

a) Identifies and responds positively to existing features of natural, historic or local character within or close to the proposed development site;

b) Integrates with existing local landscape features, promotes wildlife and biodiversity and/or applies characteristics of the local area into the design of a scheme wherever possible to create variety and interest;

c) Uses the characteristics of the locality to help inform the design of the new development including heights, massing, existing buildings lines, plot widths and depths, materials and proportions of windows and doors;

d) Is well connected to and integrates with the immediate local area and the wider area by linking to existing pedestrian and cycle routes and encouraging people to use public transport where possible;

and e) The development does not cause unacceptable harm to the amenity of neighbours through smell, the loss of privacy, outlook, noise and overlooking”

3.0 Site and the Surrounding Area

The proposal is to redevelop land at the site to the north of Harts Farm Way shown in **Appendix B**. The proposed site is understood to be limited to daytime operations only (07:00 – 23:00).

Appendix B shows the measurement position, the nearest noise sensitive receptors and sources of noise which are local roads and the A27. The area immediately surrounding the site (i.e within 400m) is predominantly of light industrial use.

Table 2 shows the nearest noise sensitive receptors.

Table 2 – Noise Sensitive Receptors

Description	Type	Distance from Site
Houses on Brockhamton Road	Residential	400m
Houses on Mill Lane	Residential	400m

4.0 Measurement Methodology

Noise levels have been measured in order to inform suitable limits for proposed development so as to minimise the noise impact of any proposed plant or activities in the area. Measurements were undertaken on the 06 March 2018 during the daytime only due to the daytime operation of the proposed development. The background noise level measurements are considered to be representative of typical background noise levels throughout the day.

4.1 Attended Measurements

Attended noise survey measurements were undertaken on 06 March 2018. The measurements of $L_{Aeq,5min}$, $L_{A90,5min}$ and L_{AFmax} were taken between 15:00 and 17:30 on 06 March 2018. The microphone height was 1.3m on the pavement of Brockhamton Road, see **Appendix B** for measurement position. The measurement position was approximately 10m from Brockhamton Road residential receptor, 100m from A27 and 400m from the proposed site.

4.2 Noise Survey Equipment

Table 3 shows the equipment details for the noise survey equipment. The sound level meter was fitted with a windshield. Measurement systems were calibrated before and after the measurements and no variation occurred. Calibration certificates showing that the equipment has undergone periodic verification to international and British standards within the last 2 years are available upon request.

Table 3 Noise Survey Equipment

Equipment	Make	Model	Serial Number	Last Calibrated
Sound Level Meter	Rion	NA-28	01170653	13/02/18
Calibrator	Rion	NC-74	35173548	29/08/17
Tripod	Tripod	Tripod	-	-

4.3 Meteorological Conditions

It should be noted that although the roads were nearly dry by the end of the survey period, the roads were damp during the measurement period. The survey period included low winds and low cloud cover. It did not rain during the survey period, although the road surfaces were slightly damp for the measurement period. Weather observations are summarised in **Appendix C**.

5.0 Noise Survey Results

5.1 Noise Survey Results

In **Table 4** below, summary results of the noise survey are provided. For full results in graphical form, please see **Appendix A**.

Table 4 Noise Survey Summary Results

Date & Time	Noise Index	Noise Level (dB)
03/06/18 15:00 to 17:30	Typical $L_{Aeq5min}$	67
	Typical L_{Amax}	80
	Typical $L_{A90,5min}$	57
	Lowest $L_{A90,5min}$	53

Typical noise levels provided in Table 4 are arithmetic averages of the 5 minute measured noise levels from the whole measurement period.

5.2 On Site Observations

The sources included occasional traffic noise from Brockhampton Road, distant noise from the A27 dual carriageway and occasional pedestrian noise from passing pedestrians on the pavement. Because traffic on the Brockhampton Road is infrequent, the measured L_{A90} at Brockhampton Road is determined primarily by road traffic noise on the A27. Since Mill Lane residential dwellings are similar distance to the A27, L_{A90} at the measurement position is expected to be representative of both residential locations although the L_{Aeq} would likely be lower at Mill Lane due to the absence of local road traffic and pedestrians.

The background noise level measurements are considered to be representative of typical background noise levels throughout the day at the sensitive receptors.

5.3 Previous Harts Farm Way Noise Survey 2014

A report dated 06 May 2014 detailing a noise assessment for new generator installation on a site adjacent on Harts Farm Way also undertook a background noise survey. The report by Ian Sharland Ltd presents results of a n unattended noise measurement over five days at a similar distance to the South of the A27 as the receptors are to the north. The noise survey results are summarised in paragraph 1.2 of the report;

“the background noise level, L_{A90} , typically falls to a level of 50dB(A) during the daytime period of 0700 – 2300”

This is generally in good agreement with the lowest L_{A90} of 53dB measured by Temple on 06 March 2018 allowing for temporal variations in traffic noise.

6.0 Noise Limits for Proposed Development

Details of the proposed mechanical plant and operations associated with the development and the operating times during the day were not available at the time of assessment. Therefore, at this stage noise limits have been proposed at the nearest sensitive receptors for the total combined noise from mechanical plant and operations associated with the proposed development.

BS4142 advises that where the rating level of plant noise does not exceed the background level, that this is an indication of the specific sound source having a low impact, depending on the context. The noise limit levels in **Table 5** below have been set at the same level as the lowest measured background see **Table 4** above. For context, the existing noise climate is road traffic from the A27 and local roads as well as minor contributions from existing local industrial sources.

Table 5 Proposed Plant Noise Limits at Residential Receptors

Period	Location	Rating Noise Level (dB)
Daytime Period (07:00 to 23:00)	Manor Court, Brockhampton Road	53
	Mill Lane	53

Note that the rating level includes any tonal or character corrections as described in BS4142.

The client has advised that any proposed plant would only be operational during the daytime so only daytime noise levels are considered in this report.

7.0 Conclusion

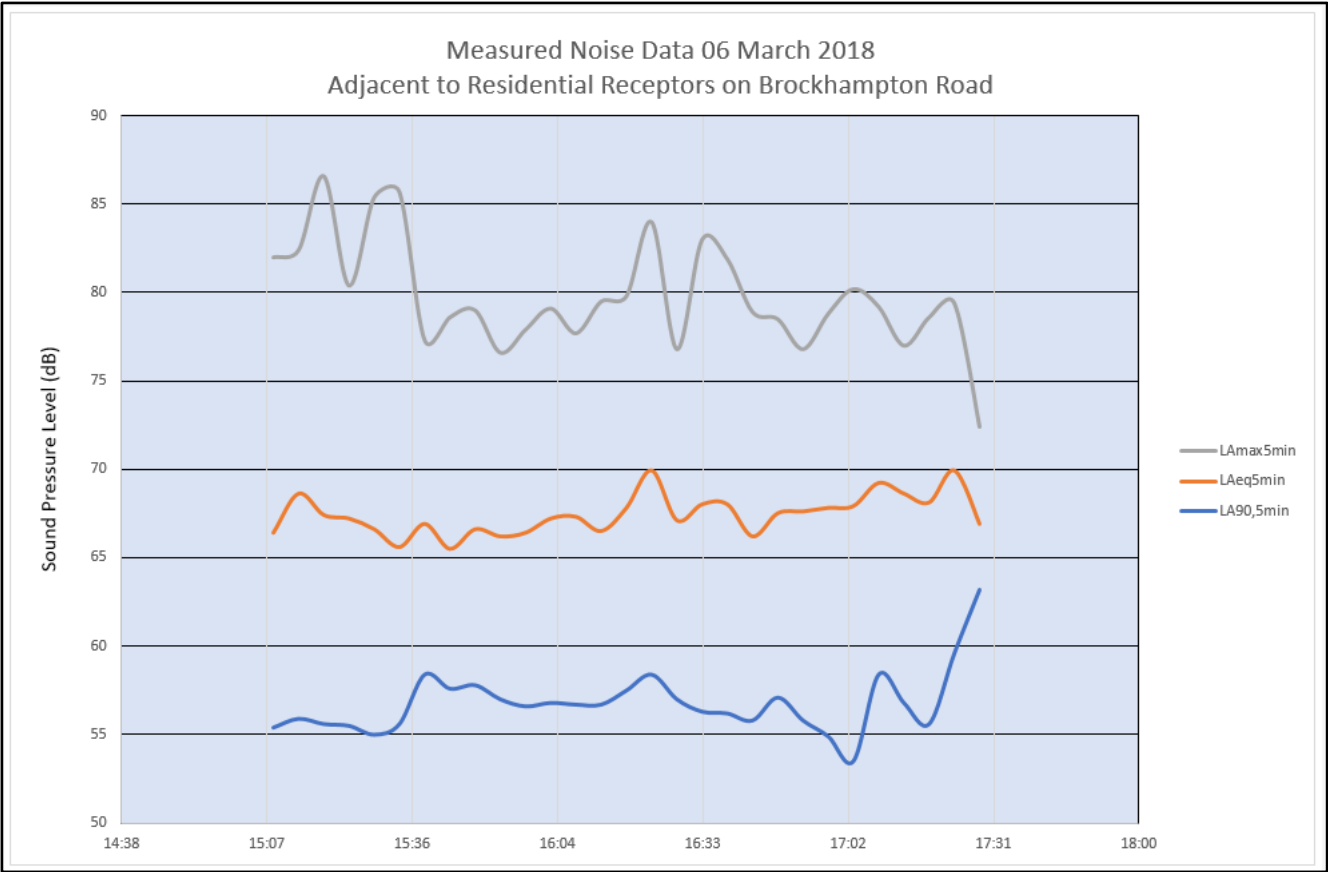
The proposal is to redevelop land at the site to the north of Harts Farm Way. The proposed site is understood to be limited to daytime operations only (07:00 – 23:00).

Attended noise survey measurements were undertaken on 06 March 2018 to inform background noise levels at nearby noise sensitive receptors on Mill Lane and Brockhampton Road.

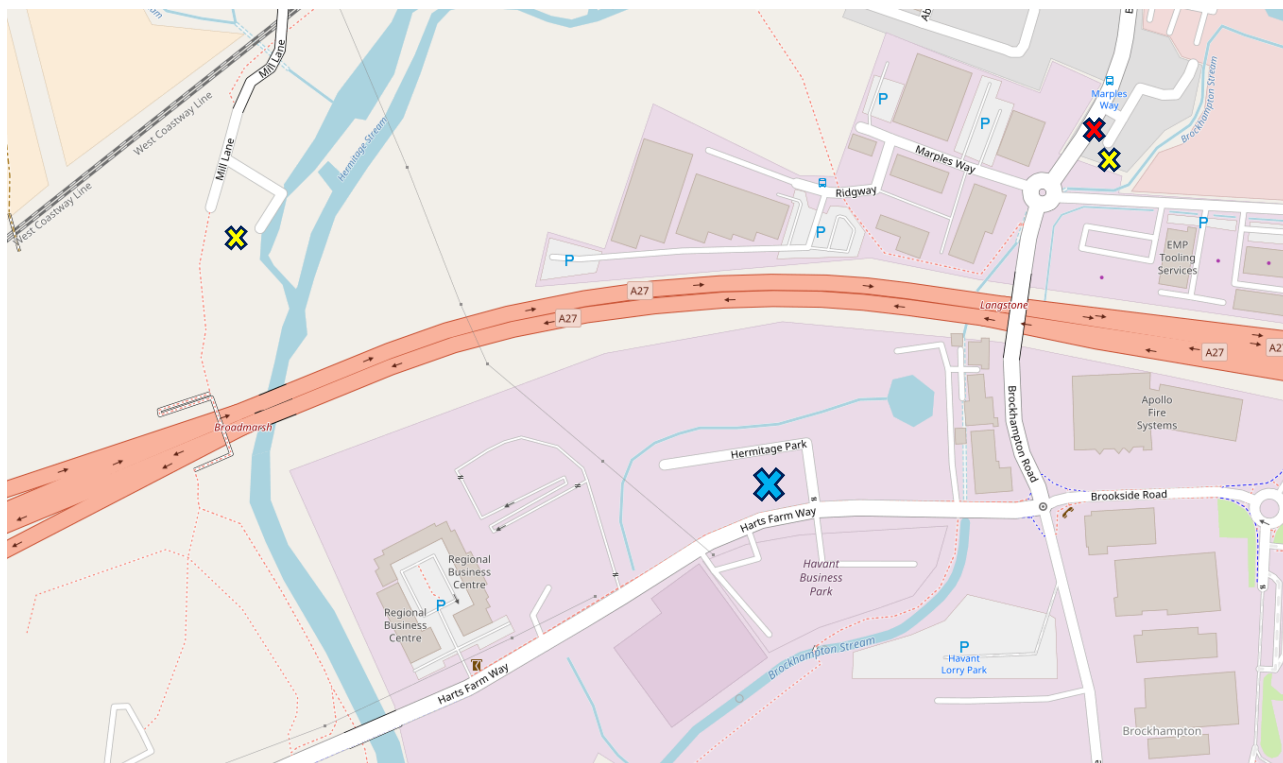
Details of the proposed mechanical plant and operations associated with the development and the operating times during the day were not available at the time of assessment. Noise limits have therefore been proposed for the total combined noise from mechanical plant and operations associated with the proposed development based on the measured background noise level and BS4142 guidance.

The rating level, as defined in BS4142, from proposed plant associated with the development should not exceed 53dB at both Mill Lane and Brockhampton Road receptors. This should be readily achievable given that the distance to the nearest receptors is approximately 400m.

Appendix A - Noise Survey Results



Appendix B - Plan of Measurement Position



✕ Local residential receptors

✕ Proposed development

✕ Noise survey position

Plan from www.openstreetmap.org

Appendix C – Weather Conditions

Weather Conditions	Observations During Survey
Temperature	Cool
Wind	Low wind
Rain	No rain
Other	Damp roads from prior rain