

Noise impact assessment to a proposed residential development

Asgard House, Hayward Business Centre, Havant PO9 2NL



Client: KB Real Estate Management Limited

Report Reference: 210706-R001

Date: 22nd July 2021

Revision:	Date:	Author:	Checked:
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0. SUMMARY

- 0.1. ACA Acoustics Limited has been commissioned to assess the impact of existing external noise sources to a proposed residential development at Asgard House, Hayward Business Centre, Havant. The assessment is required to support a prior approval application for permitted development. In accordance with The Town and Country Planning (General Permitted Development) (England) (Amendment) Order, Class O, an assessment of noise from nearby commercial premises is required.
- 0.2. To assess the impact of existing noise sources, a sound level survey has been conducted at two measurement positions across the development site (MP1 & MP2). The survey was undertaken over nominally a 3-day period between the 13th and 15th July 2021 by Sam Message of ACA Acoustics Limited. An additional attended short-term survey was also conducted on the 15th July at MP3 to measure the sound levels in the absence of any industrial/commercial noise source.
- 0.3. Measured sound levels incident on the various façades of the development range from $L_{Aeq\ 16\text{-hour}}$ 50dB to 51dB during the daytime and $L_{Aeq\ 8\text{-hour}}$ 45dB to 48dB overnight. Short-term individual noise events overnight do not regularly exceed a level of L_{Amax} 63dB.
- 0.4. A Stage 1: Initial Site Noise Risk Assessment, in accordance with ProPG Planning & Noise, identifies the site as being in an area with a negligible to low-noise risk.
- 0.5. A subjective and BS4142:2014+A1:2019 assessment of noise from the various mechanical services equipment and commercial sources in the vicinity of the site has identified that although such noise sources are present, they are not the dominant noise source and have been assessed as having a low likelihood of adverse impact on the amenity of the future occupier of this site.
- 0.6. In conclusion, ACA Acoustics recommend that the site is suitable for residential development, and that planning consent for the proposed development should not be refused on acoustic grounds.

1. INTRODUCTION

The client is preparing an application to Havant Borough Council for the change of use from Class B1(a) Offices to Class C3 Dwelling houses at Asgard House, Hayward Business Centre, Havant.

ACA Acoustics Limited has been commissioned to carry out an assessment of noise from nearby commercial and industrial premises, and, where necessary, to make recommendations for a suitable sound mitigation scheme.

The objective of the assessment is to determine the impact that existing sources would have on the proposed residential dwellings in accordance with ProPG: Planning & Noise, national planning policies, and other relevant British Standards and guidance documents.

2. ACOUSTIC CRITERIA

2.1 The Town and Country Planning (General Permitted Development) (England) (Amendment) Order

The application for Prior Approval is being made under The Town and Country Planning (General Permitted Development) (England) (Amendment) Order, Class O (GPDO). In accordance with paragraph 7.(1)(c) of the Order,

“Development under Class O is permitted subject to the condition that before beginning the development, the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to ... (d) impacts of noise from commercial premises on the intended occupiers of the development”.

It is important to consider the GPDO specifically refers to noise from commercial premises to the proposed development. Noise from other sources including traffic on nearby routes is not considered under the GPDO.

The Order does not include any assessment methodology nor criteria to be achieved and therefore it is relevant to consider guidance provided in relevant British Standards and other documents.

2.2 National Planning Policy Framework (NPPF) and Noise Policy Statement for England (NPSE)

The current revision of the National Planning Policy Framework (referred to as NPPF) was published in February 2019. The NPPF sets out the Government’s planning policies for England and provides guidance on how these are expected to be applied, providing a framework within which Local Authorities can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.

Paragraph 170 of the NPPF states:

“planning policies and decisions should contribute to and enhance the natural and local environment by ... preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability”.

Paragraph 180 also talks specifically about noise and advises:

“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:

- 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 quality of life.*
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.”*

The Government’s long-term policy aims relating to noise are contained in the Noise Policy Statement for England (referred to as NPSE). Stated aims of NPSE are:

“Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy of 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.”*

Paragraphs 2.19 to 2.24 clarify the above aims, referring to established concepts from toxicology; NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level). It also introduces a new concept relating to “significant adverse” of SOAEL (Significant Observed Adverse Effect Level), however noting:

“it is not possible to have a single objective noise-based measure that describes 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”.

The first aim of NPPF Paragraph 180 and the second underlying aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also considering the guiding principles of sustainable development, as set out in the NPPF. As neither the NPPF nor NPSE includes any numerical criteria, it is necessary to consider guidance

provided in other documents to determine suitable limits that would define the LOAEL on an individual basis.

Finally, it is also of benefit to consider Paragraph 2.7, which advises that:

“... the application of the NPSE should enable noise to be considered alongside other relevant issues and not to be considered in isolation. In the past, the wider benefits of a particular policy, development or other activity may not have been given adequate weight when assessing the noise implications”.

This provides clear guidance that noise must not be considered in isolation but as part of the overall scheme taking into account the overall sustainability and associated impacts of the proposed development; there is no benefit in reducing noise to an excessively low level if this creates or increases some other adverse impact. Similarly, it may be appropriate in some cases for noise to have an adverse impact if this is outweighed by the reduction or removal of some other adverse impact that is of greater significance to the development.

2.3 Planning Practice Guidance – Noise (PPG-N)

Related to the NPSE and the NPPF, The Department for Communities and Local Government has published additional guidance and clarifications within the Planning Practice Guidance – Noise (PPG-N), available at <https://www.gov.uk/guidance/noise--2>.

Paragraph 003 of the PPG advises that:

“Plan-making and decision making need to 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.*

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure ... is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.”

This guidance is like that set out in the NPPF and NPSE, however, Paragraph 005 of the PPG-N provides outline guidance of the definition of “significant adverse” and “adverse” effects. A copy of the table appended to Paragraph 005 is repeated below.

Response	Examples of outcomes	Increasing effect level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, 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 small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, 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
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

Figure 1: Noise exposure hierarchy, taken from Planning Practice Guidance – Noise

Although this table provides descriptions of definitions for the NOEL, LOAEL and SOAEL, as with the NPPF and NPSE there are no numerical values provided.

Paragraph 011 of the PPG-N also provides examples where the noise impact may be offset, including through the use of local amenity areas, noting:

“Noise impacts may be partially offset if residents have access to one or more of:

- *a relatively quiet facade (containing windows to habitable rooms) as part of their dwelling;*

- *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 if this area is exposed to noise levels that result in significant adverse effects;*
- *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 publicly 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 minute walking distance)."*

There is a public park on St Albans Road, around 5-minutes' walk from the development site, which may offset any residual concern relating to noise.

2.4 ProPG: Planning & Noise

ProPG: Planning & Noise is a collaborative document prepared by the Institute of Acoustics, Association of Noise Consultants, and the Chartered Institute of Environmental Health.

The document brings together guidance and recommendations in assessing the noise impact on new residential developments from various documents including the NPPF, NPSE, PPG-N, BS 8233:2014 and the World Health Organisation guidance. The aim is to regularise the assessment process and to encourage good acoustic design for new noise-sensitive developments.

The assessment process is split into two sequential stages:

- Stage 1 – An initial noise risk assessment of the proposed development site; and
- Stage 2 – A systematic consideration of four key elements:
 - Element 1 – Demonstrating a "Good Acoustic Design Process";
 - Element 2 – Observing internal "Noise Level Guidelines";
 - Element 3 – Undertaking an "External Amenity Area Noise Assessment"; and
 - Element 4 – Consideration of "Other Relevant Issues".

The Stage 1 risk assessment requires sound levels to be measured at the site over daytime and night-time periods and, if necessary, any anticipated significant changes to the climate to be predicted to determine a *"typical worst case" 24-hour day either now or in the foreseeable future*". The assessment includes all relevant sources of transport noise that affect the site (road, railway, aircraft). It may also include industrial and commercial noise where this is present but not dominant.

Copy of Figure 1 from ProPG is included in Figure 2 below.

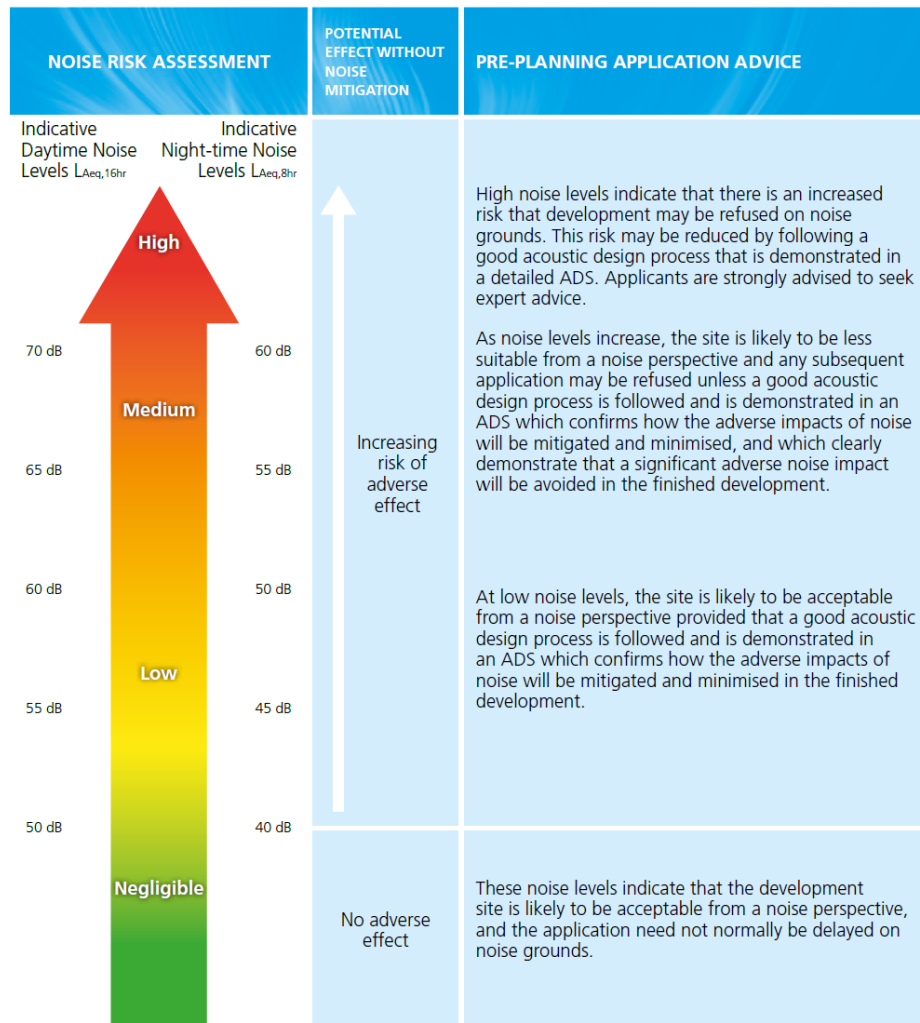


Figure 1 Notes:

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

Figure 2: Noise Risk Assessment, taken from Figure 1 of ProPG Planning & Noise

However, referring to the requirements in Section 2.1, an assessment of noise from general transport sources is not applicable for an application for Prior Approval under the GPDO. Therefore, a full ProPG assessment is not required.

Whilst a ProPG assessment is not appropriate, it is of benefit to consider internal sound level criteria for dwelling contained in ProPG. Criteria are taken from BS 8233:2014 with an additional criterion for individual short-term sound levels at night (L_{Amax}) and various clarifications and notes. These include an expansion on advice relating to the potential relaxation of the internal sound levels which is often overlooked when considering BS 8233:2014.

Copy of Figure 2 of ProPG is included in Figure 3 below.

ACTIVITY	LOCATION	07:00 – 23:00 HRS	23:00 – 07:00 HRS
Resting	Living room	35 dB $L_{Aeq,16\text{ hr}}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16\text{ hr}}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16\text{ hr}}$	30 dB $L_{Aeq,8\text{ hr}}$ 45 dB $L_{Amax,F}$ (Note 4)

NOTE 1 The Table provides recommended internal L_{Aeq} target levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Ground-borne noise is assessed separately and is not included as part of these targets, as human response to ground-borne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.

NOTE 2 The internal L_{Aeq} target levels shown in the Table are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the internal L_{Aeq} target levels recommended in the Table.

NOTE 3 These internal L_{Aeq} target levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year's Eve.

NOTE 4 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 most circumstances in noise-sensitive rooms at night (e.g. bedrooms) good acoustic design can be used so that individual noise events do not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night. However, where it is not reasonably practicable to achieve this guideline then the judgement of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number, distribution, predictability and regularity of noise events (see Appendix A).

NOTE 5 Designing the site layout and the dwellings so that the internal target levels can be achieved with open windows in as many properties as possible demonstrates good acoustic design. Where it is not possible to meet internal target levels with windows open, internal noise levels can be assessed with windows closed, however any façade openings used to provide whole dwelling ventilation (e.g. trickle ventilators) should be assessed in the "open" position and, in this scenario, the internal L_{Aeq} target levels should not normally be exceeded, subject to the further advice in Note 7.

NOTE 6 Attention is drawn to the requirements of the Building Regulations.

NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal L_{Aeq} target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. The more often internal L_{Aeq} levels start to exceed the internal L_{Aeq} target levels by more than 5 dB, the more that most people are likely to regard them as "unreasonable". Where such exceedances are predicted, applicants should be required to show how the relevant number of rooms affected has been kept to a minimum. Once internal L_{Aeq} levels exceed the target levels by more than 10 dB, they are highly likely to be regarded as "unacceptable" by most people, particularly if such levels occur more than occasionally. Every effort should be made to avoid relevant rooms experiencing "unacceptable" noise levels at all and where such levels are likely to occur frequently, the development should be prevented in its proposed form (see Section 3.D).

Figure 3: Internal sound level guidelines, taken from Figure 2 of ProPG: Planning & Noise

2.5 British Standard 8233:2014

The introduction to BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings* confirms that,

"This guide suggests criteria, such as suitable sleeping/resting conditions, and proposes noise levels that normally satisfy these criteria."

As such it is considered that guideline noise limits set out in BS 8233:2014 are suitable to protect future occupants of the dwelling from noise disturbance and compliance with these values would ensure sound levels within the new development are below the Lowest Observed Adverse Effect

Level and comply with the principles of the NPPF, NPSE and PPG-N, along with corresponding to the recommended criteria provided by the Local Authority.

Guidance limits for internal sound levels within living rooms and bedrooms are shown in Table 4 of BS 8233:2014. These are identical to the average sound level criteria of ProPG, but do not include the short-term LAfmax criteria and the expanded clarifications and notes.

2.6 British Standard 4142:2014+A1:2019

The scope of BS 4142:2014+A1:2019 advises that

“This British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature ... to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident”.

BS 4142:2014+A1:2019 is commonly used to assess the potential for loss of amenity due to noise from mechanical services equipment and is considered appropriate for this application.

The assessment method of BS 4142:2014+A1:2019 corrects the specific sound level from the source under investigation to account for characteristics that could make the sound more obtrusive to obtain a rating level. This rating level is compared against the prevailing background noise outside the noise-sensitive property. Section 11 provides a commentary of the assessment result and advises that:

- a) *Typically the greater this difference [between the rating level and background sound level], the greater the magnitude of the impact;*
- b) *A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;*
- c) *A difference of around +5dB 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 is important to consider that BS 4142:2014+A1:2019 specifically confirms that this commentary provides only an initial indicative conclusion and is dependent on the context of the assessment, which may materially alter the assessment result.

In accordance with the GPDO and BS 4142:2014+A1:2019, commercial noise does not include vehicles travelling in the vicinity.

3. REVIEW OF SITE LOCATION & DEVELOPMENT PROPOSALS

The proposal entails converting the existing office space into 10 x 1-bedroom residential units. The site sits at the very front of a business park. The west of the site is around 30m from New Lane, with several industrial/commercial units located to the north, south and east of the site.

The soundscape varies somewhat depending on the façade. The west is completely dominated by road traffic noise from New Lane, with no commercial/industrial noise sources audible. However, the other facades face towards a number of various light industrial units. During the survey it was noted that there were industrial noise sources audible outside of the development. However, it was no more dominant than the general road traffic noise and it was at a low enough level that it was barely audible inside, even with the windows fully open.

Given that road traffic is not assessed under GPDO, two measurement positions were selected on the east façade to measure the noise level over a 24-hour period.

Aerial photograph of the site is shown in Figure 4 below, with the development site and sound level measurement positions highlighted.

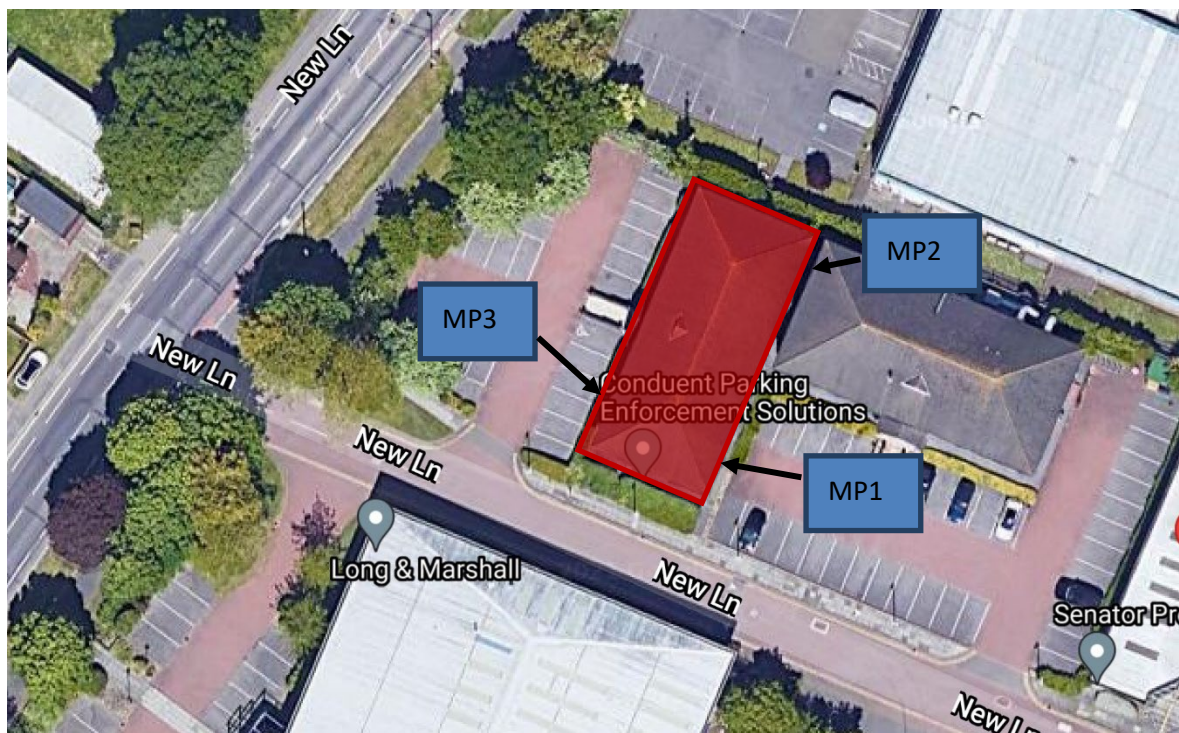


Figure 4: Aerial photograph of the development site (Available at www.google.com/maps)

4. SOUND LEVEL SURVEY

To assess the impact of existing noise sources, a sound level survey has been conducted primarily at two measurement positions across the development site (MP1 & MP2). An additional attended short-term survey was also conducted on the 15th July at MP3 to measure the sound levels in the absence of any industrial/commercial noise source. Details of the survey carried out by ACA Acoustics are provided below.

The primary survey was undertaken over nominally a 3-day period between the 13th and 15th July 2021. The survey was set up by Sam Message of ACA Acoustics Limited.

Sound levels were recorded in consecutive 15-minute samples of overall LAeq, LAFmax, and LA90 values along with other statistical indices and octave band spectra. During visits to site to set up and collect the monitoring equipment, ACA Acoustics' consultant spent time on site undertaking subjective observations of the acoustic climate and audible sources.

Weather conditions at the time of setting up the survey consisted of a temperature of 25°C, clear skies, a light south-westerly breeze, and dry ground conditions. Weather conditions have been reviewed at www.worldweatheronline.com, using the closest available commercial weather station. The extended nature of the survey ensures that a reasonable sample of results have been recorded with appropriate weather conditions.

The measurement positions are marked on the aerial photograph in Figure 4 and are described below. All measurements were taken at a façade position with the appropriate correction factor applied.

Position Reference	Description
MP1	At a height of nominally 6m with the microphone extended to outside through an east façade first-floor window.
MP2	At a height of nominally 6m with the microphone extended to outside through an east façade first-floor window.
MP3	At a height of nominally 6m with the microphone extended to outside through a west façade first-floor window.

Table 1: Sound level survey measurement positions

The following equipment was used during the survey; the sound level meters were calibrated before the survey and checked after with no deviation noted.

Equipment	Serial Number
Svantek Class 1 sound level meter type SVAN971, complete with MOLES weatherproof outdoor environmental kit	28263
Svantek calibrator type SV33B. Compliant to IEC 60942-1:2003	10436

Table 2: Equipment used for the sound level surveys – MP1 & MP3

Equipment	Serial Number
NTi Audio Class 1 sound level meter type XL2-TA	A2A-18128-E0
Svantek calibrator type SV33B. Compliant to IEC 60942:2003	10436

Table 3: Equipment used for the sound level surveys – MP2

Results of the measurement survey are shown in graphical form below.

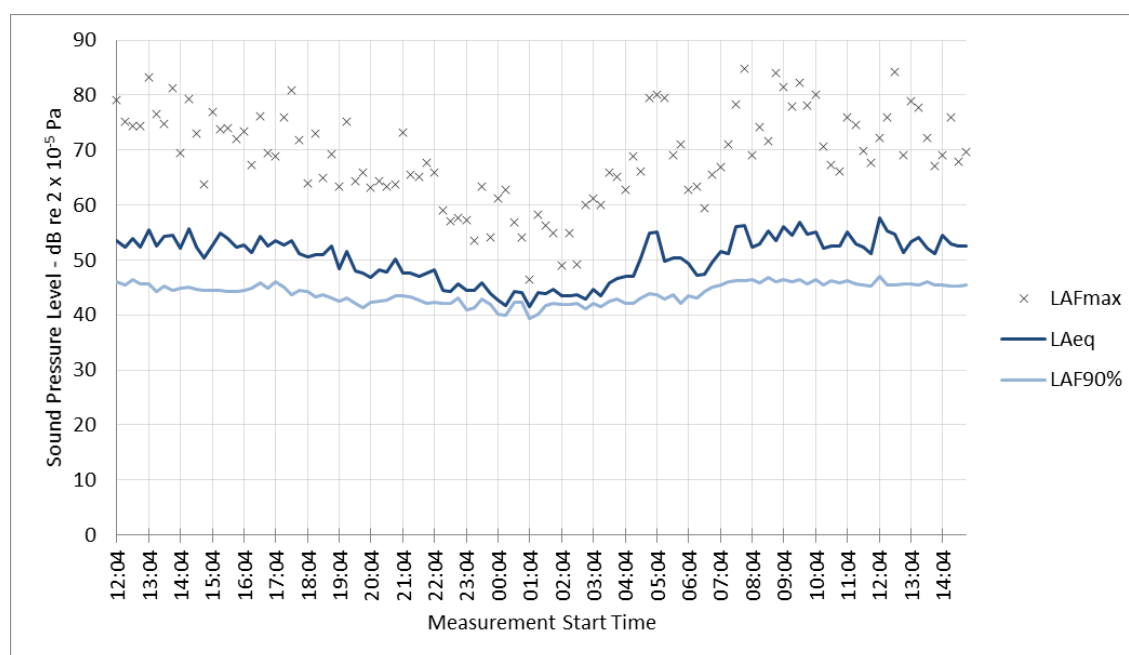


Figure 5: Sound level survey results 13th-14th July 2021 – MP1

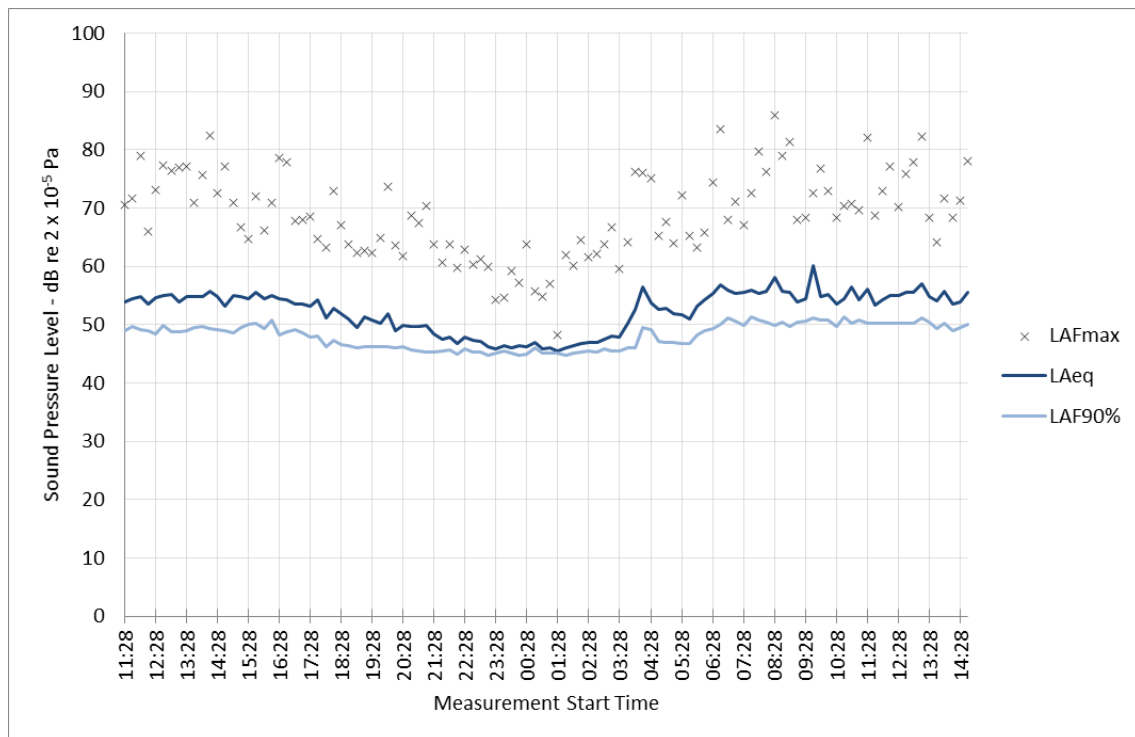


Figure 6: Sound level survey results 13th-14th July 2021 – MP2

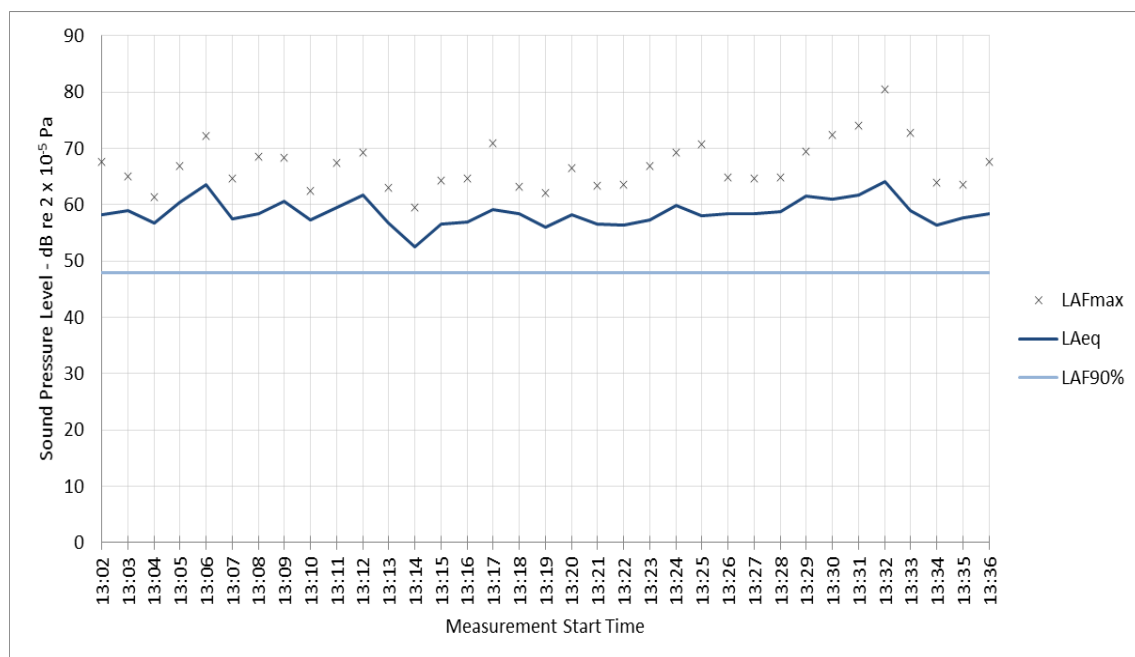


Figure 7: Sound level survey results 15th July 2021 – MP3

Note that the results in graphical form are the measured raw data. A 3dB façade correction is applicable to determine the sound level incident on the façade.

Summary sound level survey results are shown in tabular form below, incorporating the façade correction.

Position	Daytime (07:00 – 23:00) LAeq	Minimum Daytime (07:00 – 23:00) LA90	Night-Time (23:00 – 07:00) LAeq	Minimum Night-Time (23:00 – 07:00) LA90	Night-Time Typical LAfmax ¹ (23:00 - 07:00)
MP1	50dB	38dB	45dB	36dB	62dB
MP2	51dB	42dB	48dB	42dB	63dB
MP3	56dB	45dB	N/A	N/A	N/A

Table 4: Summary sound level survey results

¹: The 10th highest measured LAfmax values over the period between 23:00 and 07:00 have been reported as being representative of a typical 'high' LAfmax value.

5. ProPG STAGE 1 INITIAL NOISE RISK ASSESSMENT

Results of the sound level survey have been plotted on the image in Figure 2 to determine the relevant noise risk category.

Results of the initial risk assessment are included in Figure 8 and 9 below.

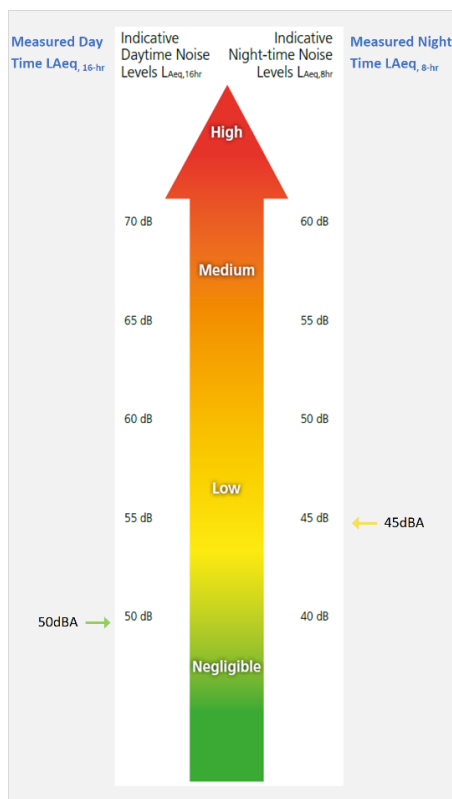


Figure 8: ProPG initial noise risk assessment (MP1)

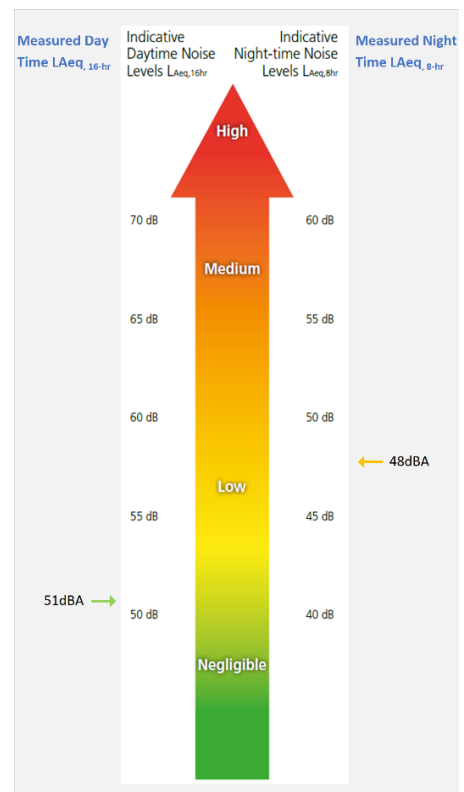


Figure 9: ProPG initial noise risk assessment (MP2)

The initial site risk assessment indicates that site is in an area where there is a negligible to low noise risk during the daytime and night-time at both monitoring positions.

6. ASSESSMENT OF INDUSTRIAL/COMMERICAL NOISE SOURCES

Although the initial site risk assessment indicates a low risk level, the nature of the noise sources at both monitoring positions necessitates further analysis and assessment. As such it is necessary to consider the potential for adverse impact using methodology set out in BS 4142:2014+A1:2019.

At both monitoring positions there was a relatively even mix of road traffic noise and industrial/commercial noise. As aforementioned, the industrial/commercial noise sources were only audible outside of the windows and not inside even with a fully open window. However, it is still appropriate to assess the likely impact this may have on the amenity of the future occupiers of the site.

To extract the specific sound level of the industrial/commercial noise sources only is not straightforward as other sources (mostly road traffic) would have been contributing to the overall sound levels. To account for this -3dB has been applied to the overall daytime LAeq values to arrive at the specific sound levels. This is a worst-case and very conservative assumption and is based on the industrial noise being equal to the noise from road traffic and all other sources. The background sound level measured at the western façade, screened from the industrial sources, has been used in the assessment.

An assessment of noise from the industrial/commercial noise sources is shown below.

Description	MP1	MP2	Relevant Clause	Commentary
Specific sound level of plant equipment	LAeq 47dB	LAeq 48dB	7.3.2	Typical LAeq level, with identifiable periods of daytime plant operating.
Background sound level	LA90 45dB	LA90 45dB	8.1	Representative background sound level
Acoustic feature correction	+0dB	+0dB	9.2	The industrial/commercial noise sources did not have any acoustically distinguishable features compared to the residual soundscape.

Description	MP1	MP2	Relevant Clause	Commentary
Rating level	LAr 47dB	LAr 48dB	9.2	
Excess of rating level over background sound level	2dB	3dB	11	Assessment indicates low likelihood of adverse impact

Table 5: BS 4142:2014+A1:2019 assessment to MP1

The BS4142:2014+A1:2019 assessment indicates a low likelihood of adverse impact. Additionally, with the 15dBA reduction provided by a partially open window, the internal levels from industrial/commercial noise sources will be within guidelines for a good standard of amenity inside living rooms and bedrooms during the daytime, as recommended in BS 8233:2014, and will be significantly below the background level.

7. CONCLUSION

An application is to be submitted to Havant Borough Council seeking consent for the conversion of existing offices into 10 x 1-bedroom residential apartments at Asgard House, Hayward Business Centre, Havant.

ACA Acoustics have undertaken a sound level survey at the site. A ProPG Stage 1 initial noise risk assessment has indicated the site is in a negligible to low-risk area.

A subjective and BS4142:2014 assessment of noise from the various mechanical services equipment and commercial sources in the vicinity of the site has identified that although such noise sources are present, they are not the dominant noise source and have been assessed as having a low likelihood of adverse impact on the amenity of the future occupier of this site.

In conclusion, ACA Acoustics recommend that the site is suitable for residential development, and that planning consent for the proposed development should not be refused on acoustic grounds.

