clement acoustics
www.clementacoustics.co.uk

London office
1B(c) Yukon Road
London
SW12 9PZ
Tel: 0203 475 2280

Manchester office
105 Manchester Road
Bury
BL9 0TD
Tel: 0161 850 2280

PROPOSED MEDICAL CENTRE ACCOMODATION,

FIELDBARN ROAD, HAMPTON MAGNA, BUDBROOKE, WARWICK

NOISE EXPOSURE ASSESSMENT

Report **16974-NEA-02**

Prepared on 25 November 2021

Issued For

Harpreet Singh Sangarah

1 Sladehill

Warwick

CV35 8SA

Executive Summary

This noise exposure assessment has been undertaken so external building fabric elements can be specified in order to meet appropriate internal noise criteria at a proposed medical centre accommodation, Fieldbarn Road, Hampton Magna, Warwick.

The assessment adheres to the Local Authority requirements, the principles provided by the *National Planning Policy Framework*: 2021 (NPPF) and internal noise criteria stated within BS 8233: 2014 *'Guidance on sound insulation and noise reduction for buildings'.*

The Institute of Acoustics' *Professional Guidance on Planning & Noise*: 2017 (ProPG) recommended approach for determining site risk due to environmental noise has also been adopted.

The site currently comprises a pub carpark. Proposals include the construction of a new health centre premise, with accommodation adjacent and above.

A noise survey has been undertaken as detailed in the report, in order to establish the prevailing environmental noise levels at the site.

A subsequent detailed analysis has been carried out of road traffic and pub noise intrusion through the external building fabric. Sound insulation performance specifications have been proposed for a glazing system and trickle ventilators.

The assessment has demonstrated that appropriate internal noise levels should be achievable with the installation of nominal glazing systems and typical trickle ventilators.

It is essential that certificated performances should be sought from the manufacturer(s) of the proposed glazing systems and trickle ventilators.

This report is designed to be suitable to discharge typical noise planning conditions, as per our original scope of work. The report should not be relied upon for further reasons, such as the detailed design of mitigation measures.

Clement Acoustics has used all reasonable skill and professional judgement when preparing this report. The report relies on the information as provided to us at the time of writing and the assumptions as made in our assessment. This report contains confidential information and should not be disclosed to third parties.

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Document Revision	Date of Revision	Reasons for Revision	Revision By
0	25/11/2021	First Issue	Jamie Newton AMIOA

1.0 INTRODUCTION

Clement Acoustics has been commissioned by Harpreet Singh Sangarah to assess the suitability of the site at Fieldbarn Road, Hampton Magna, Budbrooke, Warwick for residential development.

Proposals are to redevelop a site currently used as a pub carpark to comprise a health centre premise with accommodation adjacent and above.

This report presents the results of environmental noise surveys undertaken in order to measure prevailing background levels and details the proposed internal noise level criteria.

Full details of necessary mitigation measures in order to meet the proposed criteria are also provided.

2.0 SITE DESCRIPTION

The proposed development site is currently used as a pub carpark, with redevelopment plans to comprise a health centre premise with accommodation adjacent and above. The site is in a mixed residential and commercial area facing on to Fieldbarn Road, a street largely populated by residential premises.

The site is bound by The Montgomery of Alamein pub carpark to the north, a community centre to the east, Budbrooke Primary School the south and existing health centre accommodation to the west

At the time of the survey, the background noise climate was dominated by road traffic from Slade Hill and Field Barn Road, as well as extraction plant operating at The Montgomery of Alamein pub.

3.0 ARCHITECTURAL ASSUMPTIONS

3.1 Drawings

The following MAB Architecture Drawings drawings have been used in our assessment:

- 1996/21: Site Plan
- 1996/24: Floor Plans
- 1996/25: Elevations

3.2 Room Volume and Window Dimensions

Based on the above drawings we have based our calculations on the following worst case living room and bedroom and window dimensions.

- Living Room
  - Room Volume: 48 m^3
  - Window Area: 4 m^2
- Bedroom
  - Room Volume: 38 m^3
  - Window Area: 3 m^2

3.3 Room Finishes

Our assessment assumes that bedrooms and living rooms will contain typical amounts of soft furnishings, including sofas, chairs, beds and curtains.

4.0 CRITERIA

4.1 National Planning Policy Framework: 2021 (NPPF)

The NPPF, which was first published in 2012 with the latest revision in 2021, outlines the Government's environmental, economic and social policies for England. The NPPF aims to enable local authorities to produce their own distinctive local and neighbourhood plans, which should be applied in order to meet the needs and priorities of their communities.

Paragraph 185 of The *Ground Conditions and Pollution* section of the NPPF relates specifically to noise stating that:

'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…'

4.2 BS 8233: 2014 Internal Noise Criteria

BS 8233: 2014: '*Guidance on sound insulation and noise reduction for buildings*' describes recommended acceptable internal noise levels for residential spaces during daytime and night-time hours. These levels are shown in Table 4.1.

Activity	Location	Design range $L_{eq,T}$ Daytime (07:00-23:00)	Night-time (23:00-07:00)
Resting	Living Room	35 dB(A)	-
Dining	Dining Room/Area	40 dB(A)	-
Sleeping	Bedroom	35 dB(A)	30 dB(A)

Table 4.1: BS 8233: 2014 recommended internal background noise levels

4.3 World Health Organisation Guidelines

The World Health Organisation (WHO) document on *'Guidelines for Community Noise'* 1999 states the internal noise level guidelines as summarised in Table 4.2.

Specific Environment	Critical Health Effects	$L_{eq,T}$	$L_{max,\ F}$
Dwelling, Indoors	Speech Intelligibility and moderate annoyance, daytime and evening	35 dB(A)	-
Inside Bedrooms	Sleep disturbance, night-time	30 dB(A)	45 dB(A)

Table 4.2: WHO Internal noise level guidelines

The document also states *'For a good sleep, it is believed that indoor sound pressure levels should not exceed approximately 45dBA LAmax more than 10-15 times per night, (Vallet & Varnet 1991).'*

4.4 External Noise Criteria

The guidance of BS 8233: 2014, with regards to external amenity spaces, is as follows:

"*For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited*."

The site is in an area that would be considered rural. We would therefore recommend the guidance upper guideline value of $L_{Aeq,T}$ 50 dB(A) would be an appropriate target although exceedance of this may also be acceptable where unavoidable.

4.5 Proposed Noise Level Criteria

On the basis of Sections 4.1 to 4.4 above, Table 4.3 presents our proposed minimum design targets to be achieved in the worst affected dwellings.

Location	Period	Design Target	
		$L_{eq,T}$	$L_{max,F}$
Living Rooms	Daytime (07:00-23:00 hours)	35 dB(A)	-
Bedrooms	Night-time (23:00-07:00 hours)	30 dB(A)	45 dB(A)*
External Amenity	24 Hours	50 dB(A)	-

Table 4.3: Proposed noise level criteria

***Please note that this is not an absolute limit, however, $L_{max,F}$ 45 dB(A) should not be regularly exceeded.**

The external building fabric would need to be carefully designed to achieve these recommended internal levels.

4.6 Professional Guidance on Planning & Noise (ProPG)

The Institute of Acoustics' *Planning & Noise: Professional Practice Guidance on Planning and Noise: New Residential Development*: 2017 (the ProPG) provides a recommended approach for dealing with noise within the planning process, specifically in relation to new residential developments.

The ProPG follows 2-stage risk assessment approach. The two stages are as follows:

- Stage 1 - an initial assessment where external noise is rated against the risk of adverse effect; and
- Stage 2 – consideration of key elements to determine the suitability of the site for a residential dwelling.

The results of the initial Site noise risk assessment will determine the appropriate risk of developing the site and therefore how appropriate it is from a noise perspective.

Appendix B presents the Initial Site Risk assessment as presented in ProPG.

Stage 2 attempts to determine that good acoustic design principals have been incorporated into the design so that suitable internal noise levels can be achieved in habitable rooms and that suitable external noise levels can be achieved in outdoor amenity space.

4.7 Guidance on Ventilation

Guidance on ventilation and associated acoustic considerations is given in Acoustic Ventilation and Overheating – Residential Design Guide [AVO] issued jointly by the Association of Noise Consultants and the Institute of Acoustics.

In this guide, the need for ventilation (as falls under the requirements of Approved Document F [ADF] are covered in three main requirements as follows:

- Whole Dwelling Ventilation
    - General ventilation – continuous ventilation of rooms or spaces at a relatively low rate
- Extract Ventilation
    - Removal of air from a space or spaces (typically stale air from bathrooms or kitchens) to outside

- Purge Ventilation
    - Manually controlled removal of air at a high rate to eliminate fumes and odours, e.g. during painting and decorating or from burnt food. May be provided by natural or mechanical means.

Four main template systems for providing each of the above ADF ventilation requirements are summarised in the AVO guide as shown in Table 4.4.

Ventilation System	Method of Whole Dwelling Ventilation	Method of Extract Ventilation	Method of Purge Ventilation
System 1 [*Background ventilators and intermittent extract fans*]	Background ventilators (trickle vents)	Intermittent extract fans	Typically provided by opening windows
System 2 [*Passive Stack*]	Background ventilators (trickle vents) & passive stack	Continuous via passive stack	Typically provided by opening windows
System 3 [*Continuous Mechanical Extract (MEV)*]	Continuous mechanical extract (low rate), trickle vents provide fresh air	Continuous mechanical extract (high rate), trickle vents provide fresh air	Typically provided by opening windows
System 4 [*Continuously mechanical supply and extract with heat recovery (MVHR)*]	Continuous mechanical supply and extract (low rate)	Continuous mechanical supply and extract (high rate)	Typically provided by opening windows

Table 4.4: Summary of template systems for ADF ventilation requirements

Where possible, natural forms of ventilation are typically preferred. However, in high noise areas, it may be necessary to recommend System 4, in order to minimise penetrations through the external building façade, which weaken the overall sound reduction performance.

Ventilation requirements will be assessed with consideration to the above systems.

5.0 ENVIRONMENTAL NOISE SURVEY

5.1 Unattended Noise Survey Procedure

Measurements were undertaken at two positions as shown on indicative site drawing 16974-SP1. The choice of these positions was based both on accessibility and on collecting representative noise data in relation to the identified significant noise sources. At the time of the survey, The Montgomery of Alamein was undergoing refurbishment, and so was not operating.

The surroundings and position used for each monitoring location are described in Table 5.1.

Position No.	Description
1	The microphone was mounted on a 1st storey flat roof at the front of the Montgomery Pub building. The microphone was positioned > 3.5 m in front of the window / wall / fence. [1]
2	The microphone was mounted on a 1st storey window at the back of the Montgomery Pub building. The microphone was positioned < 1 m in front of the window / wall / fence. [2]

Table 5.1: Description of unattended monitoring locations

Note [1]: The position was considered to be free-field according to guidance found in BS 8233: 2014, and a correction for reflections has therefore not been applied.

Note [2]: The position was not considered to be free-field according to guidance found in BS 8233: 2014, and a correction for reflections has therefore been applied. Based on the presence of the reflective surface and the nature of surrounding noise sources, a correction for reflections of 2 dB has been applied, in line with the recommendations of the standard.

Continuous automated monitoring was undertaken for the duration of the survey between 13:30 on 3 November 2021 and 13:30 on 5 November 2021.

The measurement procedure generally complied with BS 7445: 1991: '*Description and measurement of environmental noise, Part 2- Acquisition of data pertinent to land use*'.

5.2 Weather Conditions

At the time of set-up and collection of the monitoring equipment, the weather conditions were dry with a light wind. It is understood that the weather conditions during the unattended survey remained generally dry with wind speeds below 5 m/s.

It is considered that the weather conditions did not significantly adversely affect the measurements and are therefore considered suitable for the measurement of environmental noise.

5.3 Equipment

The equipment calibration was verified, by means of a field verification check, before and after use and no abnormalities were observed. The equipment used was as follows.

- 1 No. Svantek Type 957 Class 1 Sound Level Meter
- 1 No. Svantek Type 977 Class 1 Sound Level Meter
- Norsonic Type 1251 Class 1 Calibrator

6.0 RESULTS

6.1 Environmental Noise Survey

The $L_{Aeq:\ 5min}$, $L_{Amax:\ 5min}$, $L_{A10:\ 5min}$ and $L_{A90:\ 5min}$ acoustic parameters were measured throughout the duration of the survey.

Measured levels are shown as a time history in Figures 16974-TH1 and 16974-TH2. A summary of the measured noise levels are presented in Table 6.1.

Period	Ambient Noise Level $L_{eq,T}$	Typical Maximum Noise Level $L_{Fmax,\ 5min}$
POSITION 1		
Daytime [07:00 - 23:00]	54 dB(A)	-
Night-time [23:00 - 07:00]	46 dB(A)	65 dB(A)
POSITION 2		
Daytime [07:00 - 23:00]	54 dB(A)	-
Night-time [23:00 - 07:00]	51 dB(A)	61 dB(A)

Table 6.1: Site noise levels for daytime and night time

The levels presented in Table 6.1 are as expected considering the site locations proximity to main local access roads. Provided adequate mitigation measures are put in place during the design and construction phase of the development, recommended internal noise levels can be achieved. Outline mitigation measures are described in Section 8.0 of this report.

Maximum noise levels shown in Table 6.1 are deemed to be 'not regularly exceeded' as required for maximum internal noise level specification purposes.

7.0 NOISE MODELLING

7.1 Model Construction

Based on the measured noise levels from the identified sources of noise, noise modelling has been undertaken to investigate propagation through the site once the proposed buildings are constructed.

The noise model was constructed using the proprietary noise modelling software package Cadna A.

The noise model was constructed utilising the following assumptions and parameters:

- Locations of obstacles such as proposed building envelopes
- Presence of reflecting surfaces
- Hardness of the ground between the sources and receivers
- Attenuation due to atmospheric absorption
- Calculations are performed over single octave band from 63 Hz to 8 kHz.

The proposed buildings have then been analysed in order to establish the site risk levels according to ProPG, and predicted levels of noise on each façade. Figure 7.1 shows a 3D view of the constructed noise map.

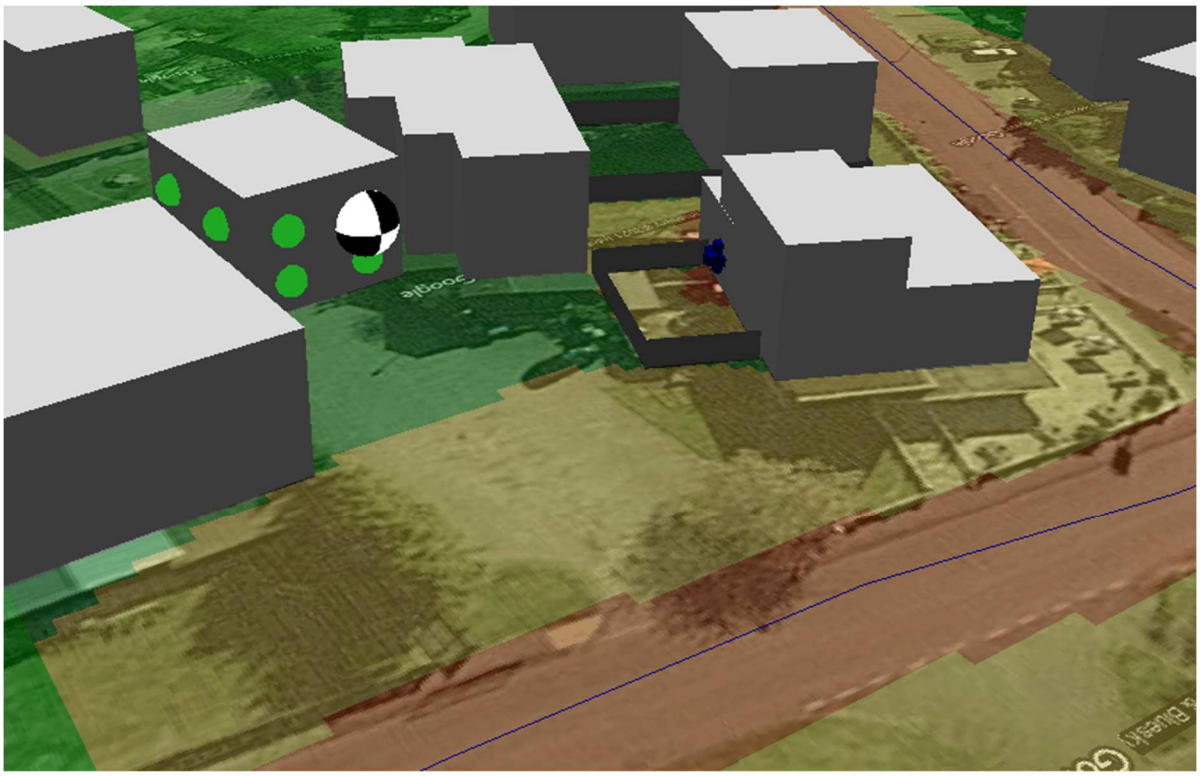


Figure 7.1: Modelled Façade Noise

7.2 Public House Garden Source Noise

In order to predict worst case usage of external areas at the public house, data has been taken from a project where measurements were undertaken in an external beer garden at a popular pub used by rugby fans during match days. Attended measurements were undertaken during a match day.

A measurement was taken close to an outdoor bar surrounded by seating occupied by rugby fans. There were approximately 80 people surrounding the measurement position, ordering drinks, talking loudly and cheering/laughing, a number substantially higher than the capacity of the beer garden at The Montgomery of Alamein pub.

The worst case at source noise levels in a busy outdoor area of the pub are as shown in Table 7.1.

Source	Sound Pressure Level (dB) in each Frequency Band, at 10m								dB(A)
	63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
External Bar Area Surrounded by Seating	68	68	69	65	64	60	55	46	69

Table 7.1: Measured sound pressure levels

These worst case at source levels have been incorporated into the noise model to the south of The Montgomery of Alamein pub in order to provide a robust assessment of measured, and anticipated noise levels experienced at the site.

8.0 PROPG INITIAL SITE RISK ASSESSMENT

The environmental noise survey has determined the onsite noise levels. Table 6.1 shows the calculated day and Night-time noise levels to be used in the noise assessment.

With reference to the ProPG risk assessment guidance and modelled noise presented in Appendix B, Table 8.1 summarises the identified risk level of this site.

Period	Measured Noise Level $L_{eq,T}$	ProPG Noise Risk	ProPG Action Guidelines
NORTHERN SITE BOUNDARY			
Daytime [07:00 - 23:00**]**	47 dB(A)	Negligible	See Note [1]
Night-time [23:00 - 07:00**]**	40 dB(A)		
SOUTHERN SITE BOUNDARY			
Daytime [07:00 - 23:00**]**	39 dB(A)	Negligible	See Note [1]
Night-time [23:00 - 07:00**]**	31 dB(A)		

Table 8.1: ProPG initial site risk assessment

In consideration of the above, we would therefore recommend that assessing the site according to the guidance of British Standard 8233: 2014 will demonstrate that the impacts of noise can be suitably mitigated to avoid an adverse impact.

Provided adequate mitigation measures are put in place during the design and construction phase of the development, recommended internal noise levels can be achieved. Outline mitigation measures are described in Section 8.0 of this report.

9.0 NOISE EXPOSURE ASSESSMENT

9.1 External Building Fabric - Non Glazed Elements

It is currently assumed that the non-glazed external building fabric elements of the proposed development would be comprised of standard masonry. This would contribute towards a significant reduction of ambient noise levels in combination with a good quality window configuration, as shown in Section 8.2.

All non-glazed elements of the building facades should be designed to provide a sound reduction performance of at least the figures shown in Table 9.1 when tested in accordance with BS EN ISO 140-3: 1995.

Element	Octave band centre frequency SRI, dB					
	125	250	500	1k	2k	4k
Non glazed element SRI	41	43	48	50	55	55

Table 9.1: Minimum required sound reduction performance from non-glazed elements

9.2 External Building Fabric - Specification of Glazed Units

Sound reduction performance calculations have been undertaken in order to specify the minimum performance required from glazed elements in order to achieve recommended internal noise levels shown in Table 4.3. This specification therefore presents the most robust assessment, for BS 8233: 2014 criteria for internal noise levels in a bedroom at all affected facades.

The minimum sound reduction index (SRI) value required for all glazed elements to be installed is shown in Table 9.2. **The performance is specified for the whole window unit, including the frame and other design features.**

Minimum Sound Reduction Index (dB) at Octave Band Centre Frequency (Hz)					
125	250	500	1k	2k	4k
24	20	25	34	37	35

Table 9.2: Required glazing performance

Where non-vision spandrel panels are proposed, they should provide sound reduction performance at least equal to that required of the glazing in order to maintain the acoustic integrity of the external building fabric.

It is essential that prospective glazing system suppliers can demonstrate compliance with the acoustic performance detailed in our specification rather than simply offering a generic glazing configuration. The complete glazing system should achieve the performance requirements stated in Table 8.2 when tested in accordance with BS EN 10140-2: 2010.

It is essential that the performance presented in Table 9.2 is met. However, the following typical configurations would be expected to meet the required levels of sound insulation.

4 mm Glass / 16 mm Gap / 4 mm Glass – R_w 31 dB

N.B. The above glazing configuration would be considered a nominal system

Please note that the above guidance only considers acoustic performance. Other disciplines, which consider thermal, safety, durability etc. should be consulted to ensure suitability.

9.3 External Building Fabric - Specification of Trickle Ventilators

It is understood the proposal on this site it to use System 1 ventilation as summarised in Table 4.4.

In order to comply with Building Regulations (Part F), fresh air ventilation to habitable rooms is required via trickle ventilators.

The trickle ventilators should comply with the minimum octave band normalised weighted level differences stated in Table 9.3.

Minimum $D_{n,e}$, Values (dB) at Octave Band Centre Frequency (Hz)					
125	250	500	1k	2k	4k
33	27	27	28	26	27

Table 9.3: Required trickle ventilator performance

It should be ensured that all mechanical extract ventilation is designed to not exceed the internal noise criteria stated in Table 4.3.

N.B. The above performance should be achievable with standard units

9.4 Flanking Transmission

It is understood that the external building fabric for this development does not include curtain walling or any other lightweight cladding. Therefore, a flanking performance specification should not be required.

Junctions where party walls and floors interface with the external building fabric should however be carefully detailed. Suitable flexible cavity stops should be introduced into cavities at party floor/wall lines.

10.0 ASSESSMENT OF EXTERNAL AMENITY SPACE

As shown in Section 4.5, the proposed design target for external amenity space is to ensure noise levels do not exceed L_{Aeq} 50 dB(A).

Comparing the modelled daytime ambient noise levels with this design range indicates that even gardens close to and overlooking The Montgomery of Alamein pub are expected to experience ambient noise levels in line with this requirement.

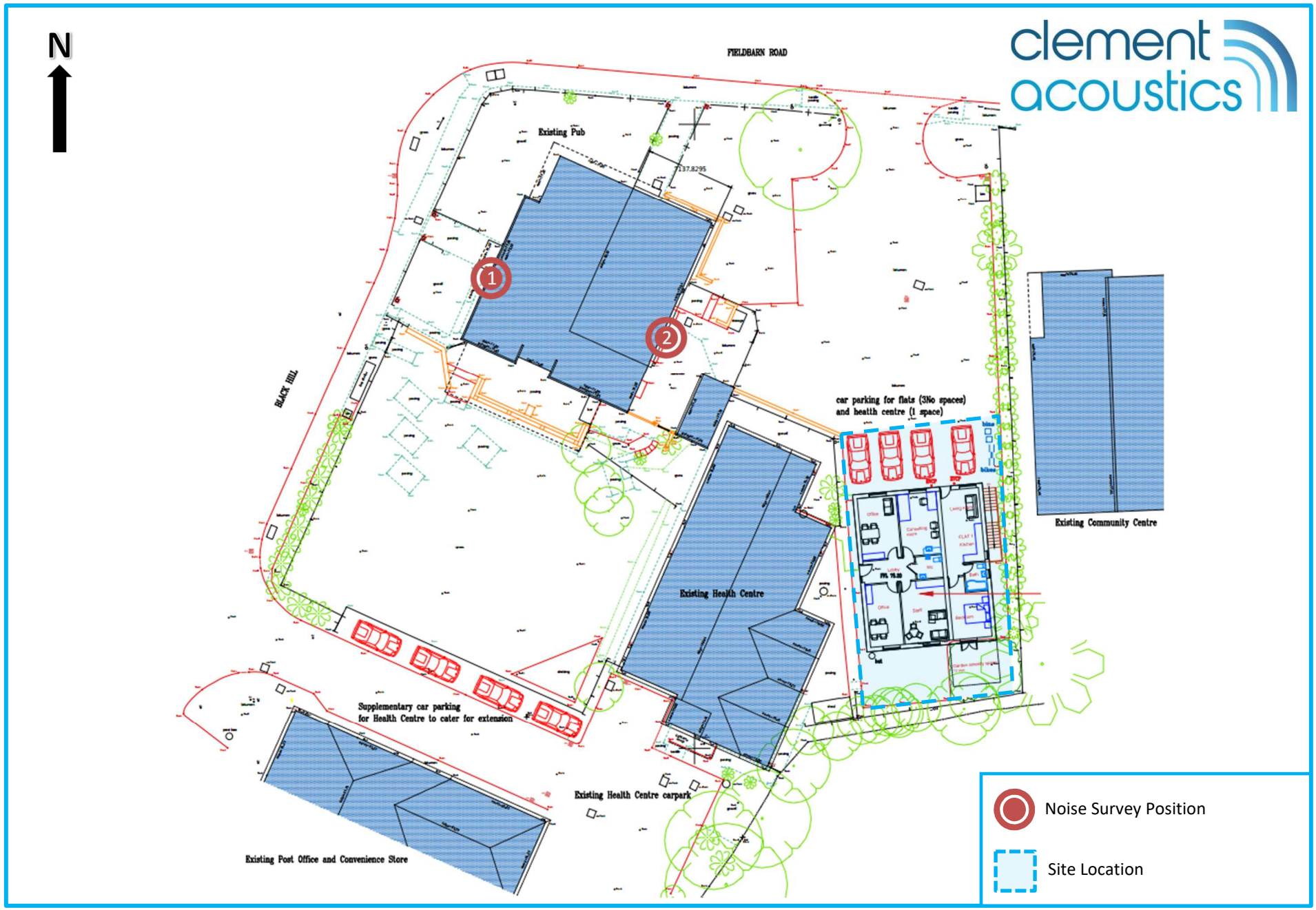
11.0 CONCLUSION

An environmental noise survey has been undertaken at the Proposed Medical Centre Accommodation, Fieldbarn Road, Hampton Magna, Warwick in order to measure ambient noise levels in the area.

Measured noise levels have allowed an assessment of the level of exposure to noise of the proposed development site to be made.

Outline mitigation measures, including a glazing specification and the use of appropriate ventilation have been recommended and should be sufficient to achieve recommended internal noise levels for the proposed development according to BS 8233: 2014, WHO and the requirements of the Local Authority.

Author	**Jamie Newton** Consultant BEng (Hons) AMIOA		25 November 2021
Reviewed	**Andrew Thomas** Senior Consultant BSc (Hons) MIOA		25 November 2021
Approved	**Duncan Martin** Director BSc (Hons) MIOA		25 November 2021



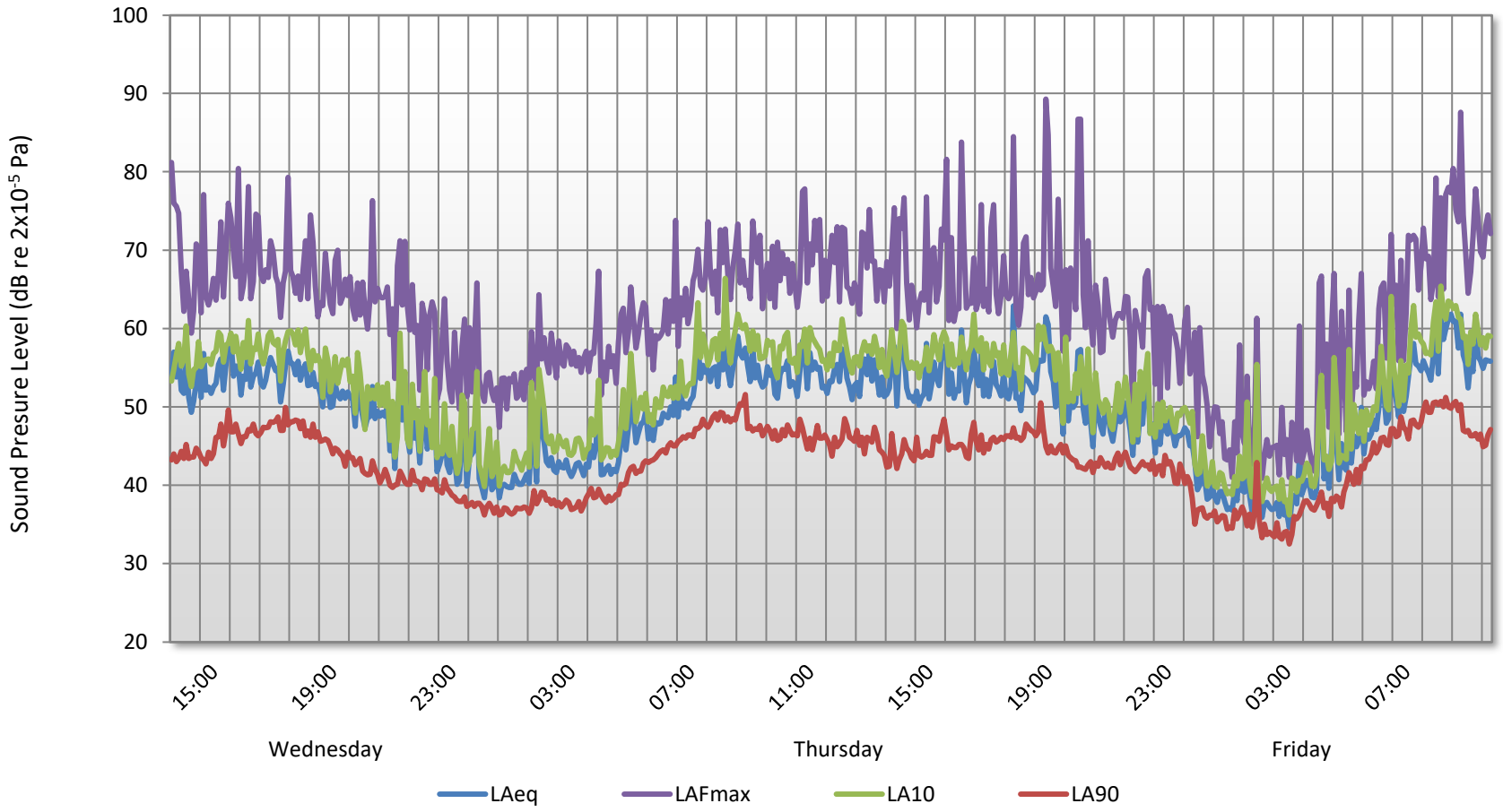
16974-SP1 Indicative site plan indicating noise monitoring positions

Date: 25 November 2021

Hampton Magna, Budbrooke, Warwick

Position 1

Environmental Noise Time History
03 November 2021 to 05 November 2021

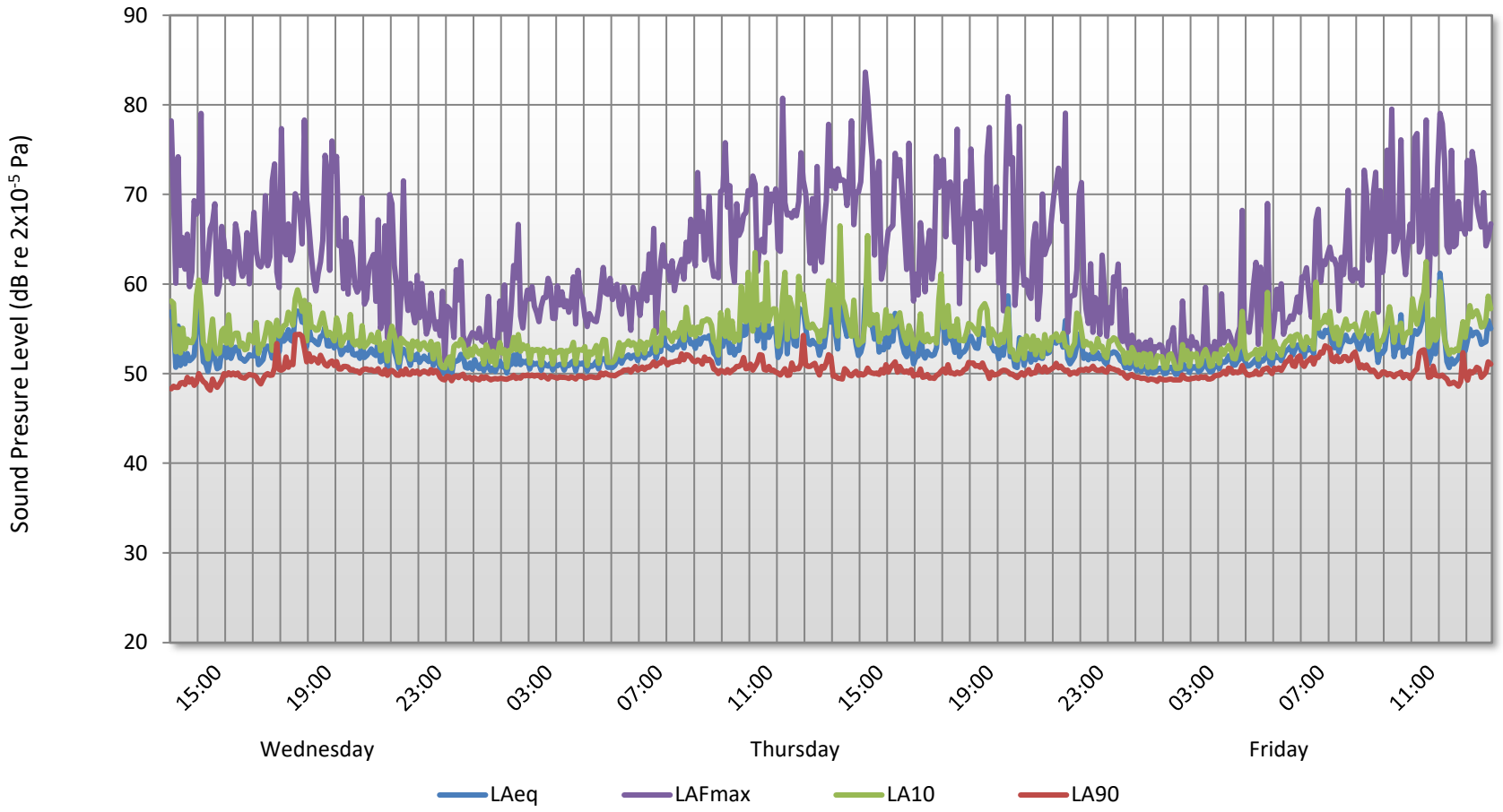


16974-TH1

Hampton Magna, Budbrooke, Warwick

Position 2

Environmental Noise Time History
03 November 2021 to 05 November 2021



16974-TH2

APPENDIX A

GLOSSARY OF ACOUSTIC TERMINOLOGY

dB(A)

The human ear is less sensitive to low (below 125Hz) and high (above 16kHz) frequency sounds. A sound level meter duplicates the ear's variable sensitivity to sound of different frequencies. This is achieved by building a filter into the instrument with a similar frequency response to that of the ear. This is called an A-weighting filter. Measurements of sound made with this filter are called A-weighted sound level measurements and the unit is dB(A).

L_{eq}

The sound from noise sources often fluctuates widely during a given period of time. An average value can be measured, the equivalent sound pressure level L_{eq}. The L_{eq} is the equivalent sound level which would deliver the same sound energy as the actual fluctuating sound measured in the same time period.

L_{10}

This is the level exceeded for not more than 10% of the time. This parameter is often used as a "not to exceed" criterion for noise

L_{90}

This is the level exceeded for not more than 90% of the time. This parameter is often used as a descriptor of "background noise" for environmental impact studies.

L_{max}

This is the maximum sound pressure level that has been measured over a period.

Octave Bands

In order to completely determine the composition of a sound it is necessary to determine the sound level at each frequency individually. Usually, values are stated in octave bands. The audible frequency region is divided into 10 such octave bands whose centre frequencies are defined in accordance with international standards.

Addition of noise from several sources

Noise from different sound sources combines to produce a sound level higher than that from any individual source. Two equally intense sound sources operating together produce a sound level which is 3dB higher than one alone and 10 sources produce a 10 dB higher sound level.

Attenuation by distance

Sound which propagates from a point source in free air attenuates by 6dB for each doubling of distance from the noise source. Sound energy from line sources (e.g. stream of cars) drops off by 3dB for each doubling of distance.

Subjective impression of noise

Sound intensity is not perceived directly at the ear; rather it is transferred by the complex hearing mechanism to the brain where acoustic sensations can be interpreted as loudness. This makes hearing perception highly individualised. Sensitivity to noise also depends on frequency content, time of occurrence, duration of sound and psychological factors such as emotion and expectations. The following table is a reasonable guide to help explain increases or decreases in sound levels for many acoustic scenarios.

Change in sound level (dB)	Change in perceived loudness
1	Imperceptible
3	Just barely perceptible
6	Clearly noticeable
10	About twice as loud
20	About 4 times as loud

Barriers

Outdoor barriers can be used to reduce environmental noises, such as traffic noise. The effectiveness of barriers is dependent on factors such as its distance from the noise source and the receiver, its height and its construction.

Reverberation control

When sound falls on the surfaces of a room, part of its energy is absorbed and part is reflected back into the room. The amount of reflected sound defines the reverberation of a room, a characteristic that is critical for spaces of different uses as it can affect the quality of audio signals such as speech or music. Excess reverberation in a room can be controlled by the effective use of sound-absorbing treatment on the surfaces, such as fibrous ceiling boards, curtains and carpets.

APPENDIX B

ProPG Initial Site Risk Assessment Guidance

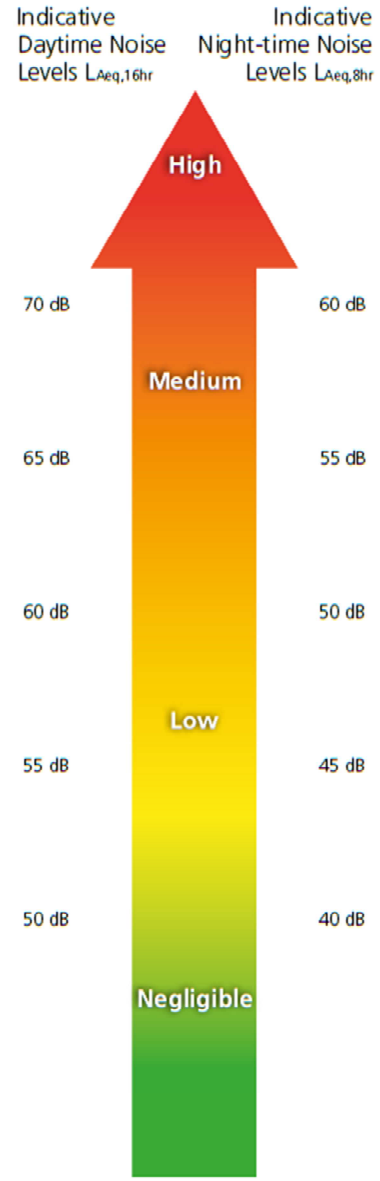
NOISE RISK ASSESSMENT	POTENTIAL EFFECT WITHOUT NOISE MITIGATION	PRE-PLANNING APPLICATION ADVICE
	Increasing risk of adverse effect	High noise levels indicate that there is an increased risk that development may be refused on noise grounds. This risk may be reduced by following a good acoustic design process that is demonstrated in a detailed ADS. Applicants are strongly advised to seek expert advice. As noise levels increase, the site is likely to be less suitable from a noise perspective and any subsequent application may be refused unless a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised, and which clearly demonstrate that a significant adverse noise impact will be avoided in the finished development. At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.
	No adverse effect	These noise levels indicate that the development site is likely to be acceptable from a noise perspective, and the application need not normally be delayed on noise grounds.

Figure 1 Notes:

a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.

b. 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".

c. $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.

d. 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 1. Stage 1– Initial Site Noise Risk Assessment

16974 - Field Barn Rad, Hampton Magna, Budbrooke, Warwick

Appendix B - ProPG Assessment

Daytime Noise Levels, dB

... < 50
50 <= ... < 60
60 <= ... < 70
70 <= ...

Night-Time Noise Levels, dB

... < 40
40 <= ... < 50
50 <= ... < 60
60 <= ...