MR PHILIP LOFTHOUSE

PROPOSED CHANGE OF USE OF BARN TO WEDDING VENUE & EVENTS FACILITY

RIDDLE PIT FARM, HEPWORTH, HD9 2TR

APPLICATION REF: 2021/1496

NOISE ASSESSMENT

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SECTION 1 INTRODUCTION

1.1 RP Acoustics Ltd (RPA) has been commissioned by Mr Philip Lofthouse to undertake a noise assessment as part of an application for the change of use of an agricultural barn to form a wedding venue & events facility at Riddle Pit Farm, Flint Lane, Hepworth, HD9 2TR (the application site). The Barnsley Metropolitan Borough Council planning application reference is 2021/1496.

1.2 The objectives of the investigation were to:

i. Identify the nearest noise sensitive receptors (NSRs) to the site.

ii. Determine the existing residual noise climate around the site and its environs.

iii. Determine the principal noise sources associated with the operation of the site as a wedding venue & events facility.

iv. Assess the impact of the identified noise emissions on the NSRs with reference to pertinent guidance.

v. Propose attenuation measures and management controls, as necessary, to address any potentially significant impacts.

1.3 This report details the methodology and results of the assessment and provides comment on potential areas of concern from noise impacts together with attenuation recommendations where considered necessary.

1.4 This report has been prepared for Mr Philip Lofthouse and his agent Paul Matthews Architectural Ltd for the sole purpose described above and no extended duty of care to any third party is implied or offered.

1.5 A glossary of acoustic terms used in the main body of the text is contained in Appendix 1.

SECTION 2 SITE SETTING AND DESCRIPTION OF THE VENUE PROPOSALS

2.1 SITE SETTING

2.1.1 Riddle Pit Farm is located in Hepworth, to the west of Flint Lane. The farmstead consists of a drive off Flint Lane, leading through a grassed area to the farmhouse which is set back from the road. An existing barn is located to the north west of the farmhouse and a small lake is located to the east of the farmhouse. An aerial image of the site and its environs is contained in Appendix 2.1.

2.1.2 The development proposals consist of the conversion of the existing barn to form a wedding and events building, formation of a car parking area to the north of the drive adjacent to Flint Lane and use of the area adjacent to the lake for photographs etc. Proposed development plans are contained in Appendix 2.2.

2.1.3 The site is located in a predominantly rural/agricultural setting and is bound by:

i. Agricultural and shrub land to the north, with the Fox House public house circa. 240 metres to the north of the barn. It is understood that the Fox House has a 1st floor flat (landlord flat which is currently unoccupied).

ii. Flint Lane to the east, with a wind farm (three turbines) and Wavin UK pipe works beyond.

iii. Agricultural and shrub land to the south and west.

2.2 DESCRIPTION OF THE VENUE PROPOSALS

2.2.1 The proposal for the change of use is to provide a venue to host weddings and events. For this purpose, the existing barn will be converted into a wedding and events building and will contain an entertainment space, bar and seating area, a preparation and warming kitchen and general ancillary spaces. Music for events will be located on a mezzanine floor in the western area of the barn and will consist of a DJ with PA system or a small band. The barn is of masonry and timber construction, with the barn doors in the eastern façade (i.e. oriented towards the farmhouse).

2.2.2 A 37 no. space car park is proposed off Flint Lane to the north of the access drive (see Appendix 2.1.). The car park is circa. 100 metres to the barn and it is proposed that the majority of guests will walk from the car park to the venue, with a small number of vehicles dropping off at the venue reception area (bride and groom, disabled guests etc.).

2.2.3 It is understood that, initially, events will predominantly take place on weekends in the summer months. It is further understood that guest numbers will vary depending on the event, with a minimum of around 50 guests and a maximum of around 150 guests anticipated.

2.2.4 The proposed closing time of the venue is midnight. The main entertainment will be a house DJ using a permanent set-up sound system. The flexibility is required, however, to offer the option of a small band playing. Events will take place indoors, with limited use of the outside space (e.g. photographs and socializing prior to guests being called into the wedding and events building for the main reception and meal).

SECTION 3 NOISE SENSITIVE RECEPTORS AND PRINCIPAL NOISE SOURCES

3.1 NOISE SENSITIVE RECEPTORS

3.1.1 Following a site inspection visit, existing noise sensitive receptors (NSRs) in the vicinity of the site were identified as follows:

i. NSR1: 1st floor flat of the Fox House public house located approximately 240 metres to the north of the wedding and events building.

3.1.2 For reference, the approximate distance to receptor has been determined relative to the closest façade of the wedding and events building. The location of NSR1 is identified on the annotated aerial image contained in Appendix 2.1.

3.2 PRINCIPAL NOISE SOURCES

3.2.1 Given the setting of the proposed venue, the principal noise sources associated with hosting wedding and events have been identified as follows:

i. Entertainment noise breakout from the wedding and events building associated with live bands or a disco.

ii. Guests arriving at and departing from the venue.

iii. Noise associated with the use of the garden/lake area.

iv. Noise associated with external plant.

SECTION 4 ASSESSMENT CRITERIA

4.1 NATIONAL PLANNING POLICY FRAMEWORK

4.1.1 The National Planning Policy Framework (NPPF) is a material consideration in planning decisions. At the heart of the NPPF is a presumption in favour of sustainable development and the policies, taken as a whole, constitute the Government's view on what sustainable development in England means in practice for the planning system.

4.1.2 The NPPF states that there are three overarching objectives to sustainable development, which include an economic objective (contributing to building a strong, responsive and competitive economy), a social objective (providing the supply of housing required to meet the needs of present and future generations) and an environmental objective (which includes minimising waste and pollution).

4.1.3 The main policy statements in relation to noise are Paragraphs 191 and 193 of the NPPF, which state:

> 191. 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[69];
>
> b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
>
> c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

> 193. 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.

4.1.4 In relation to 'adverse impacts' (footnote [69]), the NPPF refers to the Explanatory Note to the Noise Policy Statement for England (NPSE) for guidance.

4.1.5 The Noise Policy Statement for England (NPSE) and associated Explanatory Note were published by DEFRA in 2010 and set out the Government's noise management strategy to enable noise management decisions to be made within the wider context (i.e. guiding principles of sustainable development), in a cost-effective manner and in a timely fashion.

4.1.6 Fundamental to this approach is '*there is a need to integrate consideration of the economic and social benefit of the activity or policy under examination with proper consideration of the adverse environmental effects, including the impact of noise on health and quality of life. This should avoid noise being treated in isolation in any particular situation, i.e. not focussing solely on the noise impact without taking into account other related factors'*.

4.1.7 The noise policy aims of NPSE are to (i) avoid significant adverse impact on health and quality of life, (ii) mitigate and minimise adverse impacts on health and quality of life, and (iii) where possible, contribute to the improvement of health and quality of life. The policy aims are always to be considered within the context of the Government's policy on sustainable development.

4.1.8 In relation to the mitigation and minimisation of adverse impacts, NPSE considers that *'in reality, although not always stated, the aim has tended to be to minimise noise 'as far as is reasonably practical'*. This is reinforced in Paragraph 2.24 of the Explanatory Note, which requires that '*all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur'*.

4.1.9 In relation to explaining the 'significant adverse' and 'adverse' effects quoted in the NPPF, NPSE uses the two established concepts from toxicology that are currently being applied to noise impacts, for example by the World Health Organisation (WHO), these are:

- NOEL – No Observed Effect Level. This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to noise.

- LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.

4.1.10 The NPSE then extends these concepts to lead to a SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.

4.1.11 No specific criteria are presented in the NPSE, to provide the necessary policy flexibility until further evidence and suitable guidance is available. In lieu of specific criteria, for this assessment, RPA makes reference to existing guidance, which is summarised in the following paragraph(s).

4.2 NATIONAL PLANNING PRACTICE GUIDANCE: NOISE

4.2.1 Guidance provided in the National Planning Practice Guidance (NPPG) for noise, presents a table of noise exposure hierarchy, which relates the NOEL, LOAEL and SOAEL levels to the subjective perception of noise and examples of outcomes (reproduced in Table 4.1 below).

Table 4.1: Summary of noise exposure hierarchy (from NPPG, Noise)

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

4.2.2 When considering the factors that influence whether noise could be a concern, the NPPG considers that '*the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected'*. This includes factors such as the source and absolute level of the

noise, the time of day it occurs, the number of noise events and the frequency and pattern of occurrence.

4.3 **BS 4142:2014+A1:2019**

4.3.1 BS 4142 describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:

i. sound from industrial and manufacturing processes;

ii. sound from fixed installations which comprise mechanical and electrical plant and equipment;

iii. sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and

iv. 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.

4.3.2 The methods described in BS 4142 use outdoor sound levels to assess the likely effects of sound on people for the purposes of (i) investigating complaints, (ii) assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and/or commercial nature, and (iii) assessing sound at proposed new dwellings or premises used for residential purposes.

4.3.3 BS 4142 considers that the significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. It goes on to suggest that:

i. A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;

ii. A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and

iii. 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.

4.3.4 Where the initial estimate of the impact needs to be modified due to the context, factors to be taken into account include the absolute level of sound and whether dwellings will already incorporate design measures that secure good internal and/or outdoor acoustic conditions. The reference time interval of the specific sound is 1 hour during the day and 15 minutes at night.

4.3.5 The rating level is described as the specific sound level (the equivalent continuous A-weighted sound pressure level at the assessment position (NSR) produced by the specific sound source over the given reference time interval) plus any adjustment for the characteristic features of the sound. The character correction relates to whether and to what degree the specific sound is assessed to have an element of tonality, impulsivity and/or characteristics that are readily distinctive against the residual acoustic environment.

4.3.6 The background sound level is the A-weighted sound pressure level of the residual sound at the assessment position that is exceeded for 90 percent of a given time interval, T, measured using time weighting 'F' and quoted to the nearest whole number of decibels. The residual sound is described as the ambient sound remaining in a given position in a given situation when the specific sound source is suppressed to a degree such that it does not contribute to the ambient sound.

4.3.7 With reference to the NPPF/NPSE and BS 4142, a rating level of < + 10 dB accords with the 1st aim of NPSE (to avoid significant adverse impacts), whilst a rating level of ≤ the representative background level accords with the 2nd aim of NPSE (to mitigate and minimise adverse impacts).

4.4 WORLD HEALTH ORGANISATION GUIDELINES FOR COMMUNITY NOISE

4.4.1 The World Health Organisation Guidelines for Community Noise (1999) (WHO Guidelines) considers that for the restorative process of sleep, internal bedroom levels should not exceed 30 dB $L_{Aeq,23:00-07:00}$. Assuming the sound attenuation of a partially open window is 15 dB, this equates to an external free field level of 45 dB L_{Aeq} with windows partially open. Additionally, discrete event maxima should not regularly exceed 45 dB L_{AFmax} internally. This equates to an external free field level of 60 dB L_{AFmax} with windows partially open.

4.4.2 For speech intelligibility during the daytime and evening period, internal living room levels should not exceed 35 dB $L_{Aeq,07:00-23:00}$. This equates to an external free field level of 50 dB L_{Aeq} with windows partially open.

4.4.3 The WHO Guidelines advises that to protect the majority of people from being seriously annoyed during the daytime, the steady continuous noise should not exceed 55 dB $L_{Aeq, 16\ hour}$ and to protect the majority of people from being moderately annoyed during the daytime the outdoor sound level should not exceed 50 dB $L_{Aeq, 16\ hour}$.

4.5 GOOD PRACTICE GUIDE ON THE CONTROL OF NOISE FROM PUBS AND CLUBS

4.5.1 Guidance on the assessment criteria and control of entertainment noise is contained in the 'Good Practice Guide on the Control of Noise from Pubs and Clubs' (GPG) published by the Institute of Acoustics in March 2003. This document is generally accepted as the standard for the assessment of entertainment noise sources. Entertainment noise sources are taken as music, singing and speech originating from inside or outside the building.

4.5.2 Further, a Working Draft Annex was produced which contains suggested entertainment noise criteria. For principal entertainment noise, different criteria are proposed depending on the frequency and timing of the events, with criteria for frequent occurrence and late opening (after 23:00 hours) being more stringent.

4.5.3 Two of the sets of criteria are potentially applicable to the wedding and events building and are as follows:

4.5.3.1 Annex A2.2 – Venues where entertainment takes place more than 30 times per year, not more than once in a single week and ends by 23:00 hours.

i. The $L_{Aeq,T}$ of the entertainment noise should not exceed the representative background noise level $L_{A90,T}$ (without entertainment noise) by more than 5 dB, and

ii. The $L_{10,T}$ of the entertainment noise should not exceed the representative background noise level $L_{90,T}$ (without entertainment noise) by more than 5 dB in each third octave band between 40 Hz and 160 Hz.

4.5.3.2 If the above criteria are met entertainment noise is generally audible but not overly intrusive inside noise sensitive property.

4.5.3.3 Annex A2.3 – Venues where entertainment takes place more than once per week or continues beyond 23:00 hours.

i. The $L_{Aeq,T}$ of the entertainment noise should not exceed the representative background noise level $L_{A90,T}$ (without entertainment noise), and

ii. the $L_{10,T}$ of the entertainment noise should not exceed the representative background noise level $L_{90,T}$ (without entertainment noise) in each third octave band between 40 Hz and 160 Hz.

4.5.3.4 If the above criteria are met entertainment noise will be virtually inaudible inside noise sensitive property. The criteria are relevant to both internal and external levels at the noise sensitive premises.

4.5.4 The Annex A2.2 and A2.3 criteria based on a comparison of L_{10} and L_{90} levels between 40 and 160 Hz has been developed to address issues associated with entertainment noise such as a strong bass component associated with live and amplified music at nightclubs. For the proposed venue site, music noise will be associated with the wedding and events building use and will be a disco or a dance band. As such, the broadband criteria are considered the most relevant to the site.

4.5.5 The Working Draft Annex also provides guidance in relation to other noise sources as follows:

4.5.5.1 **Noise from gardens and play areas** – if noise levels produced outside a noise sensitive property due to the general use of gardens and play areas regularly exceed 55 dB $L_{Aeq,5min}$ when measured at least 3.5 metres from a building façade (or in external amenity areas) this may indicate that unacceptable disturbance is occurring (note: this guidance is derived from the World Health Organisation Guidelines).

4.5.5.2 **Noise from car parks and access roads** – if predictions or measurements indicate that noise from customers' vehicles will produce or have regularly produced L_{AFmax} levels in excess of 70 dB at 1 metre outside windows of noise sensitive property between 23:00 and 07:00 hours, then this may be an indication that unacceptable disturbance is occurring. This level equates to an external free field level of 67 dB L_{AFmax}.

4.6 CODE OF PRACTICE ON ENVIRONMENTAL NOISE CONTROL AT CONCERTS

4.6.1 Principles and guidelines for the control of environmental noise at concerts are contained in the Noise Council's 1995 publication 'Code of Practice on Environmental Noise Control at Concerts' (CoP). This is considered to represent additional relevant guidance on noise from music events.

4.6.2 The purpose of the CoP is to give guidance on how potential disturbance or annoyance to those living in the vicinity of music events can be minimised. The authors believe that compliance with the guidelines and the other advice given in the CoP will enable successful concerts to the held whilst keeping to a minimum the disturbance caused by noise. It is recognised, however, that full compliance with the CoP may not eliminate all complaints, and that local factors may affect the likelihood of complaints. The CoP is designed to address the environmental problem of noise from the performance and sound checks only and not other environmental impacts of the concert.

4.6.3 The CoP considers that the Music Noise Level (MNL) (defined as the L_{Aeq} of the music noise measured at a particular location) when assessed at the prediction stage or measured during sound checks or concerts should not exceed the guidelines (shown in Table 4.2 below) at 1 metre from the façade of any noise sensitive premises for events held between the hours of 09:00 and 23:00 hours.

Table 4.2: Music Noise Level guidelines (after Table 1, CoP on environmental noise control at concerts)

Concert days per calendar year, per venue	Venue category	Guideline
1 to 3	Urban stadia or arenas	The MNL should not exceed 75 dB(A) over a 15 minute period
1 to 3	Other urban and rural venues	The MNL should not exceed 65 dB(A) over a 15 minute period
4 to 12	All venues	The MNL should not exceed the background noise level[1] by more than 15 dB(A) over a 15 minute period

Notes to Table:

1 the value used should be the arithmetic average of the hourly L_{A90} measured over the last four hours of the proposed music event or over the entire period of the proposed music event if scheduled to last for less than four hours.

2 There are many other issues which affect the acceptability of proposed concerts. This code is designed to address the environmental noise issue alone.

3 In locations where individuals may be affected by more than one venue, the impact of all the events should be considered.

4 For those venues where more than three events per calendar year are expected, the frequency and scheduling of the events will affect the level of disturbance. In particular, additional disturbance can arise if events occur on more than three consecutive days without a reduction in the permitted MNL.

5 For indoor venues used for up to about 30 events per calendar year a MNL not exceeding the background noise by more than 5 dB(A) over a fifteen minute period is recommended for events finishing no later than 2300 hours.

6 Account should be taken of the noise impact of other events at a venue. It may be appropriate to reduce the permitted noise from a concert if the other events are noisy.

7 For venues where just one event has been held on one day on any one year, it has been found possible to adopt a higher limit value without causing an unacceptable level of disturbance.

4.6.4 As identified in Note 5 to Table 4.2, the CoP recommends that for indoor venues used for up to about 30 events per year, the MNL should not exceed the background noise level by more than 5 dB(A) over a 15 minute period for events finishing no later than 23:00 hours. This is consistent with the GPG Annex A2.2 guidance.

4.7 SUMMARY OF ASSESSMENT CRITERIA

4.7.1 Based on the guidance detailed above, the following criteria are considered appropriate to control the potential noise impacts of the operation of the venue:

i. Entertainment noise breakout from the wedding and events building associated with live bands or a disco:

Where entertainment noise ends by 23:00 hours, the $L_{Aeq,T}$ of the entertainment noise should not exceed the representative background noise level $L_{A90,T}$ (without entertainment noise) by more than 5 dB at the identified NSRs.

Where entertainment noise continues beyond 23:00 hours, the $L_{Aeq,T}$ of the entertainment noise should not exceed the representative background noise level $L_{A90,T}$ (without entertainment noise) at the identified NSRs.

ii. Guests arriving at and departing from the venue:

Noise from guests vehicles should not regularly produce incident (i.e. free field) L_{AFmax} levels in excess of 67 dB at 1 metre outside windows of noise sensitive property between 23:00 and 07:00 hours.

iii. Noise associated with the use of the garden areas:

Noise from the use of the external lake area should not regularly exceed a free field level of 55 dB $L_{Aeq,5min}$ at the identified NSRs.

iv. Noise associated with fixed services plant:

The cumulative rating level of external plant ($L_{Ar,T}$) should not exceed the representative background noise level ($L_{A90,T}$) at the identified NSRs.

SECTION 5 BACKGROUND NOISE SURVEY

5.1 In order to assess the existing residual background noise climate in the vicinity of the site, representative noise measurements were undertaken during the late evening period (circa. 20:00 to 21:45 hours) at NSR1 (MP1), on Tuesday 6th February 2024.

5.2 MP1 was located in a free field environment, at 1.5 metres above ground level (mAGL), on a parcel of land immediately to the south east of NSR1. The approximate location of MP1 is identified in Appendix 2.1.

5.3 Noise measurements were undertaken using a NTi Audio XL2 Type 1 integrating sound level meter. A 90 mm windshield was fitted for all measurements. The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end. No drift in calibration level was noted. Weather conditions throughout the survey were appropriate for monitoring, with a wind speed of < 5 m/s.

5.4 Measurements consisted of A–weighted broadband parameters, together with linear third octave band Leq levels, with a logging interval of 1 second. Measurement data was post-processed using NTi Audio Data Explorer software.

5.5 The following tables contain a summary of the noise measurement data, rounded to the nearest decibel. Note: during the course of the noise survey, the residual noise climate consisted predominantly of local traffic on Flint Lane and noise associated with the wind farm to the east. A condenser unit associated with the Fox House was intermittently audible at MP1 and was operational for a significant proportion of the measurements. The volume of traffic on Flint Lane during the survey was circa. 30 vehicles/hour. In order to determine the representative residual background noise climate, vehicles on Flint Lane have been excluded from the data presented in the following tables. Table 5.1. includes the Fox House condenser unit, whilst the condenser unit was not operating in the Table 5.2 data.

Table 5.1: Background noise measurements at MP1 (NSR1), Fox House condenser operating

Date	Time Period* (Duration)	$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB)	Comments
6/2/2024	20:02-20:30 (23 min)	38	36	Fox house condenser operating. Wind farm noise.

*** logged** measurements were made at MP1 of entertainment noise and the residual noise climate. The entertainment noise was remotely triggered at MP1 using a gsm switch connected to the PA system. The entertainment and residual noise measurements were separated on the time history plot using Data Explorer software.

Table 5.2: Background noise measurements at MP1 (NSR1), Fox House condenser not operating

Date	Time Period* (Duration)	$L_{Aeq,T}$ (dB)	$L_{A90,T}$ (dB)	Comments
6/2/2024	20:46-21:46 (40 min)	32	31	Wind farm noise. No other significant noise sources.

*** logged** measurements were made at MP1 of entertainment noise and the residual noise climate. The entertainment noise was remotely triggered at MP1 using a gsm switch connected to the PA system. The entertainment and residual noise measurements were separated on the time history plot using Data Explorer software.

5.6 In summary, the residual background noise climate at NSR1 is circa 36 dB $L_{A90,T}$ during the late evening period with the Fox House condenser unit operating, reducing to circa 31 dB $L_{A90,T}$ with the condenser unit not operating. The residual background noise measurements are also considered representative of the early night time period as road traffic on Flint Lane has been excluded from the data.

SECTION 6 NOISE IMPACT ASSESSMENT – ENTERTAINMENT NOISE BREAKOUT

6.1 INTRODUCTION

6.1.1 In order to assess the sound insulation of the existing barn, which is to be converted into the wedding and events building, breakout noise tests were undertaken at the same time as the noise survey in February 2024.

6.1.2 To undertake the tests, a white noise broadband sound source was set up in the proposed entertaining space (measured at a reverberant sound pressure level of 99 dB(A) within the space) and the sound pressure level (SPL) measured external to the northern façade (oriented towards NSR1) and eastern façade (containing barn doors).

6.1.3 The sound reduction index (R_{av}) of the façades was then calculated using the formula '$R_{av} = L_{in} – L_{out} – 6$', where: L_{out} is the sound level just outside the façade, L_{in} is the reverberant sound level inside the venue and R_{av} is the sound reduction index. The results are detailed in Table 6.1.

Table 6.1: Calculated average sound reduction index of existing barn

Façade	R_{av} (dB)	Comments
Northern	29	Side façade oriented towards NSR1. Masonry and timber construction. Barn doors in eastern façade closed.
Northern	29	Side façade oriented towards NSR1. Masonry and timber construction. Barn doors in eastern façade open.
Eastern	17	Front façade oriented towards farmhouse. Masonry and timber construction. Barn doors closed.
Eastern	9	Front façade oriented towards farmhouse. Masonry and timber construction. Barn doors open.

6.1.4 Based on site observations and the results of the breakout noise tests, as anticipated, the sound insulation of the northern façade is significantly higher than that of the eastern façade, which contains the entrance doors. No reduction in the breakout performance of the northern façade was observed with the barn entrance doors open.

6.2 ENTERTAINMENT NOISE

6.2.1 It is understood that musical entertainment will be hosted in the wedding and events building, with a dance floor at ground floor level and a mezzanine to hold a DJ for a disco and/or a small live band.

6.2.2 In order to assess the potential impact of breakout noise from the wedding and events building at NSR1, an entertainment noise level (ENL) was set within the building of 80 dB $L_{Aeq,T}$ (as measured

on the dance floor), with a PA system on the mezzanine level playing a music track on a loop (Price Tag by Jessie J). The ENL was set in consultation with the client, as a maximum level which would be used in the venue. Note: at this level, conversation between two people in the venue was very difficult at a 1 metre separation distance and the client confirmed that in reality the ENL would be lower than this maximum to allow guests to converse easily whilst enjoying the entertainment. It should also be noted that people noise in the venue would be masked by this maximum ENL at NSR1.

6.2.3 In order to assess the potential impact at NSR1 associated with the maximum ENL, measurements were made at MP1 at the same time as the residual noise measurements, with and without the entertainment noise and with the barn doors open and closed. Note: the entertainment noise was remotely triggered at MP1 using a gsm switch connected to the PA system.

6.2.4 The following tables contain a summary of the noise measurement data, rounded to the nearest decibel. Note: the ENL $L_{Aeq,T}$ data detailed in Tables 6.1 and 6.2 has been derived by subtracting the measured residual noise level (see Table 5.2) from the ambient noise level measured with music playing.

Table 6.1: Entertainment Noise Level at MP1 (NSR1), barn doors closed

Date	Time Period* (Duration)	L_{Aeq} (dB)	Comments
6/2/2024	20:46-21:46 (7 min)	25	Music virtually inaudible. Fox House condenser not operating.

*** logged** measurements were made at MP1 of entertainment noise and the residual noise climate. The entertainment noise was remotely triggered at MP1 using a gsm switch connected to the PA system. The entertainment and residual noise measurements were separated on the time history plot using Data Explorer software.

Table 6.2: Entertainment Noise Level at MP1 (NSR1), barn doors open

Date	Time Period* (Duration)	L_{Aeq} (dB)	Comments
6/2/2024	20:46-21:46 (8 min)	25	Music virtually inaudible. No noticeable difference in level with barn doors open. Fox House condenser not operating.

*** logged** measurements were made at MP1 of entertainment noise and the residual noise climate. The entertainment noise was remotely triggered at MP1 using a gsm switch connected to the PA system. The entertainment and residual noise measurements were separated on the time history plot using Data Explorer software.

6.2.5 Entertainment noise was, subjectively, virtually inaudible at NSR1 (with the barn doors open or closed) when the Fox House condenser was not operating and was inaudible with the condenser unit operating.

6.2.6 The ENL level was 6 dB below the residual background noise level with the Fox House condenser unit not operating (residual background noise level 31 dB $L_{A90,T}$).

6.2.7 As detailed in Section 4.7, the design criterion where events extend beyond 23:00 hours, is that the $L_{Aeq,T}$ of the entertainment noise should not exceed the representative background noise level $L_{A90,T}$ (without entertainment noise) at the identified NSRs. The measured ENL at NSR1 complies with this criterion by a margin of 6 dB. This indicates that the maximum ENL in the venue could be increased by a further 5 dB (to 85 dB(A) as measured on the dance floor) and the criterion still complied with.

6.2.8 The ENL at NSR1 is also significantly below the WHO Guidelines night time criterion of an external free field level of 45 dB $L_{Aeq,T}$ with windows partially open.

6.2.9 In terms of the NPPG (Section 4.2), the level of impact is considered to represent a No Observed Adverse Effect Level (NOAEL). Examples of outcomes for which are '*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'*. The associated action for a NOAEL is *'no specific measures required'*.

SECTION 7 NOISE IMPACT ASSESSMENT – GUESTS ARRIVING AND DEPARTING

7.1 A 37 no. space car park is proposed off Flint Lane to the north of the access drive. The car park is circa. 100 metres to the barn and it is proposed that the majority of guests will walk from the car park to the venue, with a small number of vehicles dropping off at the venue reception area (bride and groom, disabled guests etc.).

7.2 The following assessment is based on the noise criteria specified in Section 4.7. Namely, that discrete event maxima associated with car park use should not exceed an external free field level of 67 dB L_{AFmax} at NSR1.

7.3 With reference to the development plans, the closest car parking spaces are circa. 200 metres from NSR1.

7.4 In order to assess the potential noise impact at NSR1, the likely impulsive noise levels to be expected in the car park are based on the RPA database of noise sources. This includes noise monitoring at a distance of 12 metres from a car parking bay for discrete measurements of the maximum noise levels (L_{AFMax}) associated with a vehicle door shutting and vehicle starting and reversing. The activity was undertaken for three different vehicle types, with vigorous door shutting. A summary of the noise measurement data is contained in Table 7.1.

Table 7.1: Noise measurement data for 'vehicle start' event at 12 metres

Vehicle Type	Door shut (dB L_{AFMax})	Start and Reverse (dB L_{AFMax})	Comments
Skoda Octavia, petrol.	59	58	Door shut, start and reverse
	61	58	Door shut, start and reverse
Citroen Picasso, petrol.	63	56	Door shut, start and reverse
	63	55	Door shut, start and reverse
Citroen Berlingo van, diesel.	68	61	Door shut, start and reverse
	67	60	Door shut, start and reverse
Range	**59-68**	**55-61**	

7.5 Based on point source propagation, with reference to Table 7.1, the potential discrete events associated with car park activity at NSR1 have been predicted as:

i. 35 – 44 dB L_{AFmax} for a car door shutting.

ii. 31 – 37 B L_{AFmax} for a car starting and reversing.

7.6 On this basis, the impact of discrete event maxima associated with car parking activity is not considered to be significant.

SECTION 8 NOISE IMPACT ASSESSMENT – USE OF THE LAKE AREA

8.1 The following assessment is based on the noise criteria specified in Section 4.7. Namely, that noise associated with the general use of the lake area should not regularly exceed 55 dB $L_{Aeq,5min}$ when measured as a free field level at NSR1.

8.2 With reference to the development plans, the lake area is located circa 250 metres from NSR1.

8.3 In order to assess the potential noise impact at NSR1, the likely noise levels to be expected due to the use of the lake area are based on the RPA database of noise sources. This includes noise monitoring at a function with the measurement position circa 17 metres from the closest tables in a garden seating area. Generally, conversation was audible but not intelligible and was not considered intrusive. The ambient noise level was measured at 47 dB $L_{Aeq,T}$ with 20 – 30 guests present and 51 dB $L_{Aeq,T}$ with 30+ guests present.

8.4 On this basis, the impact of the use of the lake area is not considered to be significant.

SECTION 9 NOISE IMPACT ASSESSMENT – FIXED SERVICES PLANT

9.1 Details of any externally located plant (if any) associated with the venue are not currently available.

9.2 It is considered that the control of noise emissions associated with external plant is amenable to a planning condition with the following criteria (based on the noise measurement data and the requirements of BS 4142):

i. The cumulative rating level of external plant should not exceed 31 dB $L_{Ar,T}$ when measured as a free field level at the nearest noise sensitive receptor.

9.3 Given the separation distances involved, it is considered that appropriate noise control can be achieved with the judicious selection and siting of plant and/or standard noise mitigation techniques.

SECTION 10 MANAGEMENT CONTROLS

10.1 Based on the findings of the assessment, the following management controls are recommended to ensure that fugitive noise emissions associated with the proposed venue are controlled:

10.1.1 Staff should ensure that the entertainment noise levels and general behaviour of the guests is managed/controlled throughout the duration of an event.

10.1.2 There should be no external amplified music.

10.1.3 Timing restrictions should be considered for activities such as deliveries and bottling up.

10.1.4 For the arrival and departure of guests, staff should be present at the car park and on the drive to ensure that guests are respectful of the needs of local residents and to arrive at/leave the venue quietly.

SECTION 11 CONCLUSIONS

11.1 A noise impact assessment has been undertake for the proposed change of use of land and buildings at Riddle Pit Farm to form a wedding and events venue.

11.2 The principal noise sources associated with the proposed change of use are considered to be (i) entertainment noise breakout from the wedding and events building associated with live bands or a disco, (ii) guests arriving at and departing from the venue, (iii) noise associated with the use of the lake area and (iv) noise associated with fixed services plant.

11.3 Noise control and mitigation proposals have been put forward to manage noise emissions associated with the operation of the venue. On this basis, noise is not considered to represent a constraint to the proposed development.

APPENDIX 1

- Glossary of acoustic terms

Appendix 1
Glossary of Acoustic Terms

Sound Pressure Level (L_p)

The basic unit of sound measurement is the sound pressure level. As the pressures to which the human ear responds can range from 20 µPa to 200 Pa, a linear measurement of sound levels would involve many orders of magnitude. Consequently, the pressures are converted to a logarithmic scale and expressed in decibels (dB) as follows:

$L_p = 20 \log_{10}(p/p_0)$

Where L_p = sound pressure level in dB; p = rms sound pressure in Pa; and p_0 = reference sound pressure (20 µPa).

A-weighting Network

A frequency filtering system in a sound level meter, which approximates under defined conditions the frequency response of the human ear. The A-weighted sound pressure level, expressed in dB(A), has been shown to correlate well with subjective response to noise.

Equivalent continuous A-weighted sound pressure level, $L_{Aeq, T}$

The value of the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T, has the same mean-square sound pressure as a sound that varies with time. $L_{Aeq, 16h}$ (07:00 to 23:00 hours) and $L_{Aeq, 8h}$ (23:00 to 07:00 hours) are used to qualify daytime and night time noise levels.

$L_{A10, T}$

The A-weighted sound pressure level in decibels exceeded for 10% of the measurement period, T. $L_{A10, 18h}$ is the arithmetic mean of the 18 hourly values from 06:00 to 24:00 hours.

$L_{A90, T}$

The A-weighted sound pressure level of the residual noise in decibels exceeded 90% of a given time interval, T. L_{A90} is typically taken as representative of background noise.

$L_{AF\ max}$

The maximum A-weighted noise level recorded during the measurement period. The subscript 'F' denotes fast time weighting, slow time weighting 'S' is also used.

Sound Exposure Level (SEL or L_{AE})

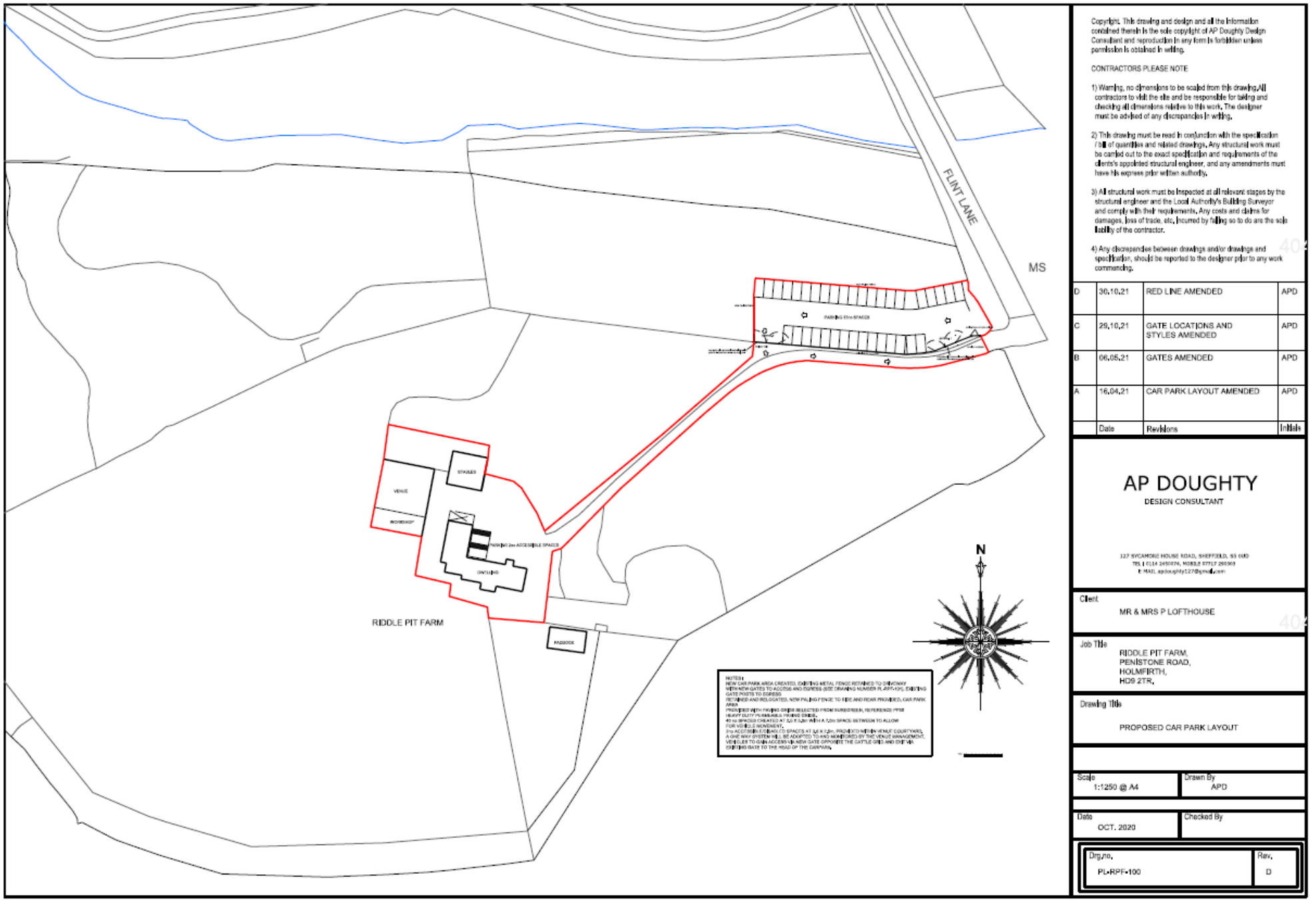
The energy produced by a discrete noise event averaged over one second, no matter how long the event actually took. This allows for comparison between different noise events which occur over different lengths of time.

APPENDIX 2

- Annotated aerial image
- Proposed plans

Appendix 2.1: Annotated Aerial Site Image

Appendix 2.2: Proposed Plans



CONTRACTORS PLEASE NOTE

1) Warning, no dimensions to be scaled from this drawing.All contractors to visit the site and be responsible for taking and checking all dimensions relative to this work. The designer must be advised of any discrepancies in writing.

2) This drawing must be read in conjunction with the specification / bill of quantities and related drawings. Any structural work must be carried out to the exact specification and requirements of the clients's appointed structural engineer, and any amendments must have his express prior written authority.

3) All structural work must be inspected at all relevant stages by the structural engineer and the Local Authority's Building Surveyor and comply with their requirements. Any costs and claims for damages, loss of trade, etc, incurred by failing so to do are the sole liability of the contractor.

4) Any discrepancies between drawings and/or drawings and specification, should be reported to the designer prior to any work commencing.

D	30.10.21	RED LINE AMENDED	APD
C	29.10.21	GATE LOCATIONS AND STYLES AMENDED	APD
B	06.05.21	GATES AMENDED	APD
A	16.04.21	CAR PARK LAYOUT AMENDED	APD
	Date	Revisions	Initials

AP DOUGHTY
DESIGN CONSULTANT

127 SYCAMORE HOUSE ROAD, SHEFFIELD, S5 0UD
TEL | 0114 2450074, MOBILE 07717 286563
E-MAIL apdoughty127@gmail.com

Client
MR & MRS P LOFTHOUSE

Job Title
RIDDLE PIT FARM,
PENISTONE ROAD,
HOLMFIRTH,
HD9 2TR,

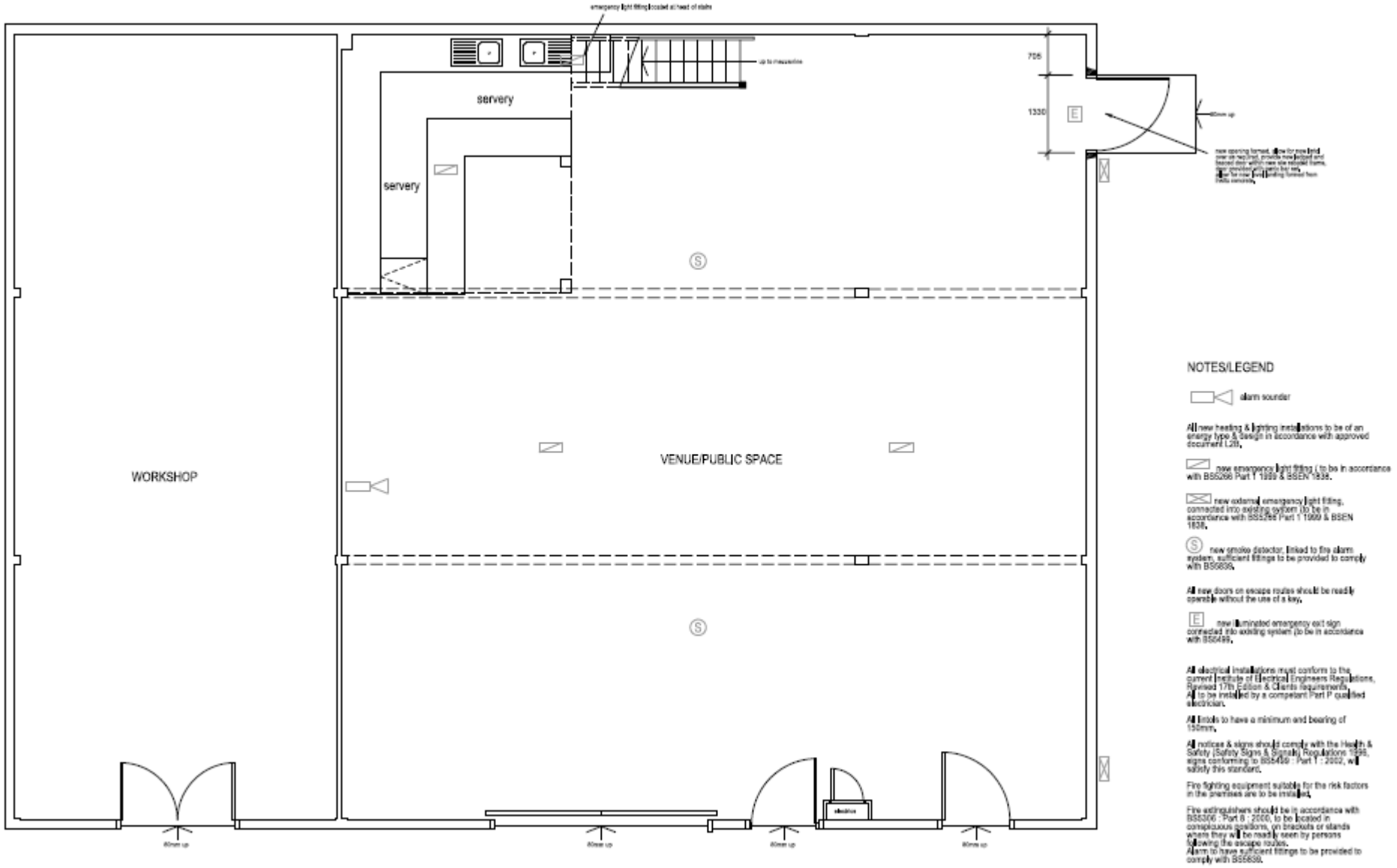
Drawing Title
PROPOSED CAR PARK LAYOUT

Scale	Drawn By
1:1250 @ A4	APD
Date	Checked By
OCT. 2020	

Drg.no.	Rev.
PL-RPF-100	D

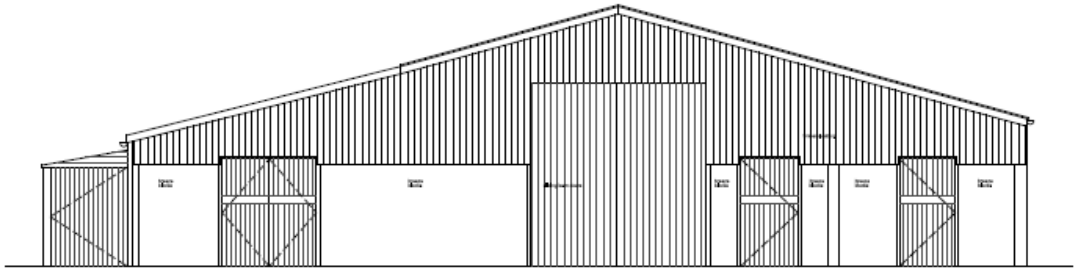
Appendix 2.2: Proposed Plans

Proposed Layout

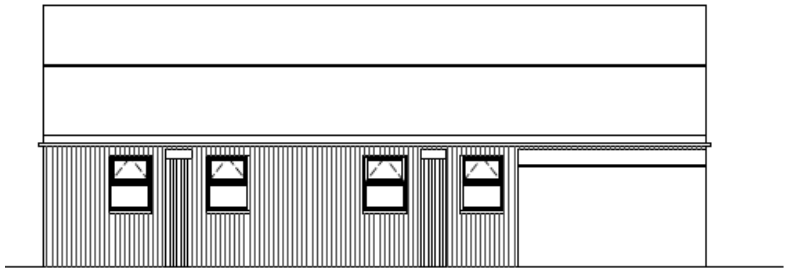


Appendix 2.2: Proposed Plans

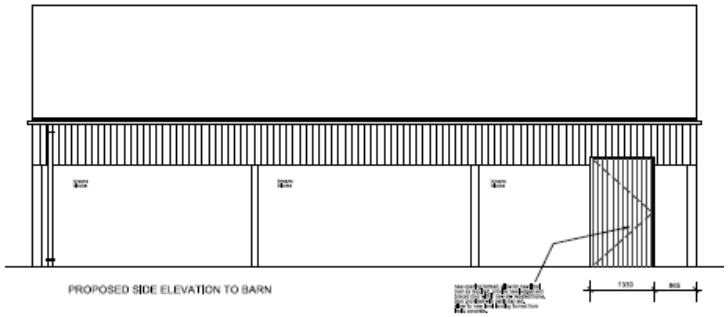
Proposed Elevations



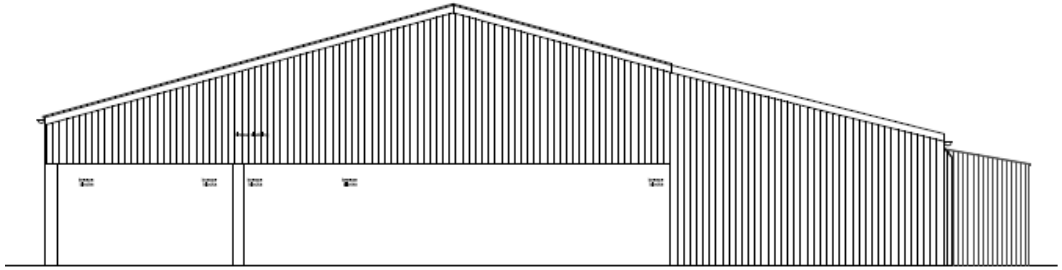
PROPOSED FRONT ELEVATION TO BARN



PROPOSED SIDE ELEVATION TO BARN



PROPOSED SIDE ELEVATION TO BARN



PROPOSED REAR ELEVATION TO BARN