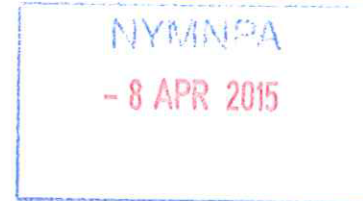
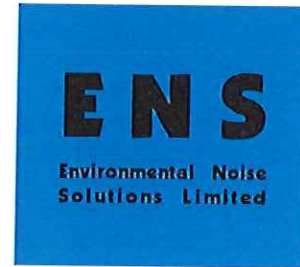


Our ref: NIA/5871/15/5666

8 April 2015

Ms Maria Ferguson  
Maria Ferguson Planning Consultancy  
Hunter Hill  
Little Crakehall  
Bedale  
DL8 1LA

**ANC**  
THE ASSOCIATION OF  
NOISE CONSULTANTS



Dear Ms Ferguson

**NOISE IMPACT ASSESSMENT FOR A PROPOSED AGRICULTURAL STORAGE BUILDING,  
THIRSLEY FARM, SILPHO, SCARBOROUGH, YO13 0JR**

**1.00 INTRODUCTION**

- 1.01 Environmental Noise Solutions Limited (ENS) has been commissioned by Maria Ferguson Planning Consultancy, on behalf of its client Mr J C Malthouse, to assess the potential impact of noise associated with the operation of a proposed agricultural storage building which is to be used, in part, for livestock accommodation (pig rearing). The application site consists of the agricultural storage building.
- 1.02 The objectives of the noise impact assessment were to:
- Measure existing daytime background noise levels in the vicinity of the nearest noise sensitive receptor (NSR) to the application site (note: a default night time background noise level has been agreed with the Environmental Health Department (EHD) at Scarborough Borough Council);
  - Determine the typical noise levels associated with a pig rearing unit based on the ENS database of noise sources;
  - Assess the potential impact of the pig rearing activity on the identified NSRs (with reference to the National Planning Policy Framework and other pertinent guidelines); and,
  - Provide recommendations for a scheme of sound attenuation works, as necessary, to ensure that there is no unacceptable loss of amenity due to noise associated with the pig rearing activity.
- 1.03 This report details the methodology and results of the assessment and has been prepared to accompany a planning application for the development proposals.
- 1.04 This report has been prepared for Maria Ferguson Planning Consultancy and its client Mr J C Malthouse for the sole purpose described above and no extended duty of care to any third party is implied or offered. Third parties making reference to the report should consult the parties above and ENS as to the extent to which the findings may be appropriate for their use.
- 1.05 A glossary of acoustic terms is contained in Appendix 1.

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## 2.00 SITE LOCATION AND DEVELOPMENT PROPOSALS

- 2.01 The application site comprises an area of agricultural land to the north west of the existing farm steading and is bound by agricultural fields on all other boundaries (see site plan contained in Appendix 2). The nearest identified NSR (NSR1) is located approximately 150 metres to the north east of the proposed agricultural building. Access to the development will be via the existing farm access road, which runs approximately nine metres to the south east of the dwelling at NSR1.
- 2.02 The development proposals consist of the erection of a general purpose agricultural building which is intended for use as storage and livestock accommodation (pig rearing). It is understood that the pig rearing will take place using a straw based system with automatic feeders. Pigs will be housed for 24 weeks (6 months) at a time (to finished weight).
- 2.03 The construction consists of a steel frame building with a dual pitch roof, concrete panel walls to 2 metres high and Yorkshire Boarding above. Access gates are located on the north west and south east elevations (i.e. oriented away from NSR1). A proposed building plan is contained in Appendix 2. The proposed building will allow sufficient space to meet future storage needs on the farm, as well as accommodation for around 1,000 pigs to finished stage.
- 2.04 It is understood that the principle vehicle movements associated with the development consist of feed wagons and livestock wagons. Feed wagons will be limited to 2 no. per week, which will be more than offset by the reduction in grain and feed being transported off the holding and a small reduction in the importation of chemical fertiliser and soil improvers. Pigs will be imported and exported on a 6 monthly rotation. Around 6 no. HGVs will be required to import new pigs and export finished pigs.

## 3.00 NOISE SURVEY WORKS

### Baseline Noise Survey

- 3.01 In order to establish existing noise levels in the vicinity of NSR1 during the daytime, a baseline noise survey was undertaken during Tuesday 17<sup>th</sup> March 2015. For the night time baseline conditions, given the rural site setting, a background noise level of 20 dB  $L_{A90,T}$  was robustly agreed with the EHD.
- 3.02 For the purpose of the assessment, a single noise monitoring position (MP1) was adopted, which was located to the south west of NSR1 (the approximate location of the noise monitoring position is contained in Appendix 2):
- 3.03 Noise measurements were undertaken using a Bruel & Kjaer 2260 Type 1 integrating sound level meter. A windshield was fitted for all measurements. Measurements were made in a free field environment at approximately 1.5 metres above local ground level. The measurement system calibration was verified immediately before the commencement of the measurement sessions and again at the end, using a Bruel & Kjaer Type 4231 calibrator. No drift in calibration level was noted. Weather conditions throughout the survey were considered appropriate for monitoring.
- 3.04 Measurements consisted of A-weighted broadband parameters, together with linear third octave band  $L_{eq}$  levels with a logging interval of 10 seconds. The following table contains a summary of the measurement data rounded to the nearest decibel.

Table 3.1: Summary of noise measurement data at NSR1

Position	Date	Time	$L_{Aeq,T}$ (dB)	$L_{AFmax}$ (dB)	$L_{A90}$ (dB)	Comment
MP1	17/3/15	13:35-14:35	45	78	33	No continuous noise sources audible. Noise climate consisting of intermittent tractor movements on access road and distant fields, jet overhead, occasional dog barking and bird scarers. $L_{AFmax}$ associated with bird scarers.

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**Noise Levels Associated with the Pig Unit**

- 3.05 Noise measurements have previously been undertaken by ENS at an existing pig unit at a farm in Flixton, East Riding (October 2013). The pig unit was circa. 40 x 40 metres footprint and housed around 1,000 pigs. The pigs were aged circa 18 weeks at the time of the survey. The pig unit was concrete up to circa 1.5 metres height with Yorkshire Boarding above. As such, the unit was very similar to the proposals for the application site.
- 3.06 For the Flixton site, a measurement was undertaken at 20 metres from the north western corner of the unit (MP5), approximately 45° off-axis to the access gates. This location is consistent with the relative orientation of the proposed building and the NSR at the application site.
- 3.07 A summary of the pig unit measurement data during feeding time is contained in Table 3.2 (note: the  $L_{Aeq,T}$  was adjusted to account for the residual noise climate; background distant road traffic).

**Table 3.2: Summary of noise measurement data at existing pig unit**

Position	Date	Time	$L_{Aeq,T}$ (dB)	$L_{AFmax}$ (dB)	Comment
MP5	21/10/13	11:53-12:14	48	65	Pig noise

3.08 Given the separation distance to NSR1, based on point source propagation (6 decibel reduction per doubling of distance) the noise level associated with the pig rearing activity in the proposed building has been calculated at up to 30 dB  $L_{Aeq,T}$  and 47 dB  $L_{AFmax}$  at NSR1. It should be noted that pigs are diurnal animals and levels outside of feeding times and during the night time period would be expected to be significantly lower.

**4.00 NOISE IMPACT ASSESSMENT CRITERIA**

**National Planning Policy Framework**

- 4.01 The National Planning Policy Framework (NPPF), came into force on 27 March 2012 and is a material consideration in planning decisions. At the heart of the NPPF is a presumption in favour of sustainable development, and the policies in Paragraphs 18 to 219 of the NPPF, taken as a whole, constitute the Government's view on what sustainable development in England means in practice for the planning system.
- 4.02 The NPPF states that there are three dimensions to sustainable development, which include an economic role (contributing to building a strong, responsive and competitive economy), a social role (providing the supply of housing required to meet the needs of present and future generations) and an environmental role (which includes minimising waste and pollution).
- 4.03 The NPPF supersedes Planning Policy Guidance Note 24 (PPG 24). The main policy statement in relation to noise is Paragraph 123 of the NPPF, which states:

*Planning policies and decisions should aim to:*

- *Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*
- *Mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*
- *Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established (note: subject to the provisions of the Environmental Protection Act 1990 and other relevant law); and*

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

4.04 In relation to 'adverse impacts', the NPPF refers to the Explanatory Note to the Noise Policy Statement for England (NPSE) for guidance.

#### **Noise Policy Statement for England**

4.05 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.

4.06 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'*.

4.07 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.

4.08 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'*.

4.09 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.

4.10 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.

4.11 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, ENS makes reference to existing guideline documents, which are summarised in the following paragraph(s).

#### **National Planning Practice Guidance**

4.12 Guidance is provided in the National Planning Practice Guidance (NPPG) for noise, which provides a table summarising the noise exposure hierarchy including the perception of the 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

- 4.13 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.

#### British Standard BS 4142:2014

- 4.14 British Standard BS 4142:2014 'Methods for Rating and Assessing Industrial and Commercial Sound' (BS 4142) describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:
- sound from industrial and manufacturing processes;
  - sound from fixed installations which comprise mechanical and electrical plant and equipment;
  - sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and

- d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.
- 4.15 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.
- 4.16 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:
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context;
  - A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and
  - 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.
- 4.17 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.
- 4.18 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.
- 4.19 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.
- 4.20 With reference to the NPPF/NPSE and BS 4142, a rating level of  $< + 10$  dB accords with the 1<sup>st</sup> aim of NPSE (to avoid significant adverse impacts), whilst a rating level of  $\leq$  the representative background level accords with the 2<sup>nd</sup> aim of NPSE (to mitigate and minimise adverse impacts). Consideration, however, also needs to be given to the contextual setting and the absolute noise levels.

#### World Health Organisation Guidelines

- 4.21 The World Health Organisation (WHO) Guidelines on Community Noise (1999) considers that if negative effects on sleep are to be avoided during the night time period, average internal noise levels should not exceed 30 dB  $L_{Aeq,23:00-07:00}$  and noise events exceeding 45 dB  $L_{AFmax}$  should be limited. The internal guideline values equate to outside bedroom (incident external levels) of 45 dB  $L_{Aeq,23:00-07:00}$  and 60 dB  $L_{AFmax}$  based on the WHO approximation of 15 dB reduction from outside to inside for a partially open window.

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## 5.00 NOISE IMPACT ASSESSMENT

### Noise Associated with Pig Rearing Activity in the Proposed Building

- 5.01 As detailed in Section 3.00, noise emissions from the proposed building associated with pig rearing activity have been calculated at up to 30 dB  $L_{Aeq,T}$  and 47 dB  $L_{AFmax}$  at NSR1 based on measurements taken by ENS elsewhere (during feeding time). Noise emissions are expected to be significantly lower outside of feeding times due to the diurnal nature of pigs. Additionally, the existing background noise level during the daytime has been measured at 33 dB  $L_{A90,T}$  and robustly estimated during the night time period at 20 dB  $L_{A90,T}$ .
- 5.02 With reference to the assessment criteria detailed in Section 4.00, in relation to assessing the potential noise impact, consideration has been given to the absolute level of the noise, the noise level relative to the existing noise climate, the time of day it occurs, the number of noise events and the frequency and pattern of occurrence.
- 5.03 During the daytime, the predicted  $L_{Aeq,T}$  noise level at NSR1 is 3 dB below the background noise level during feeding time. During the night time, based on the feeding time noise levels (as a worst case), the noise level is 10 dB above the estimated night time noise level, but in absolute terms, is 13 to 15 dB below the WHO guideline levels to avoid sleep disturbance. In this context (and with reference to Table 4.1), the impact is considered to be at the No Observed Adverse Effect Level (NOAEL) which is described as '*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*'. In this scenario there are no specific measures required.

### Noise Associated with HGV use of the Farm Access Road

- 5.04 As detailed in Paragraph 2.04, it is understood that the principle vehicle movements associated with the development consist of feed wagons and livestock wagons. Feed wagons will be limited to 2 no. per week, which will be more than offset by the reduction in grain and feed being transported off the holding and a small reduction in the importation of chemical fertiliser and soil improvers. Pigs will be imported and exported on a 6 monthly rotation. Around 6 no. HGVs will be required to import new pigs and export finished pigs.
- 5.05 For the assessment of HGV use of the farm access road, consideration has been given to the number of noise events and the frequency and pattern of occurrence. Whilst use of the access road by HGVs associated with the pig rearing activity will be audible at NSR1 (as will use of the access road in general), this should be considered in the context of a working farm, where tractors and other mobile farm plant (crop sprayers, spreaders, etc) and grain movements/deliveries occur throughout the year and even more intensively during the harvest period. In this context, the relatively small number of HGV movements associated with the pig rearing activity is considered insignificant as it represents no change to the acoustic environment.

## 6.00 CONCLUSIONS

- 6.01 Environmental Noise Solutions Limited (ENS) has been commissioned to assess the potential impact of noise associated with the operation of a proposed agricultural storage building which is to be used, in part, for livestock accommodation (pig rearing).
- 6.02 On the basis of the assessment detailed in this report, noise emission levels associated with the proposed development are considered acceptable in terms of the NPPF.

If you have any queries concerning the above please do not hesitate to contact me.

Yours sincerely

Richard Pennell  
For Environmental Noise Solutions Limited

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**APPENDIX 1  
GLOSSARY OF ACOUSTIC TERMS**

N/A  
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**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  $\mu\text{Pa}$  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  $\mu\text{Pa}$ ).

**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.

**Weighted Sound Reduction Index ( $R_w$ )**

Single number quantity which characterises the airborne sound insulation properties of a material or building element over a defined range of frequencies ( $R_w$  is used to characterise the insulation of a material or product that has been measured in a laboratory).

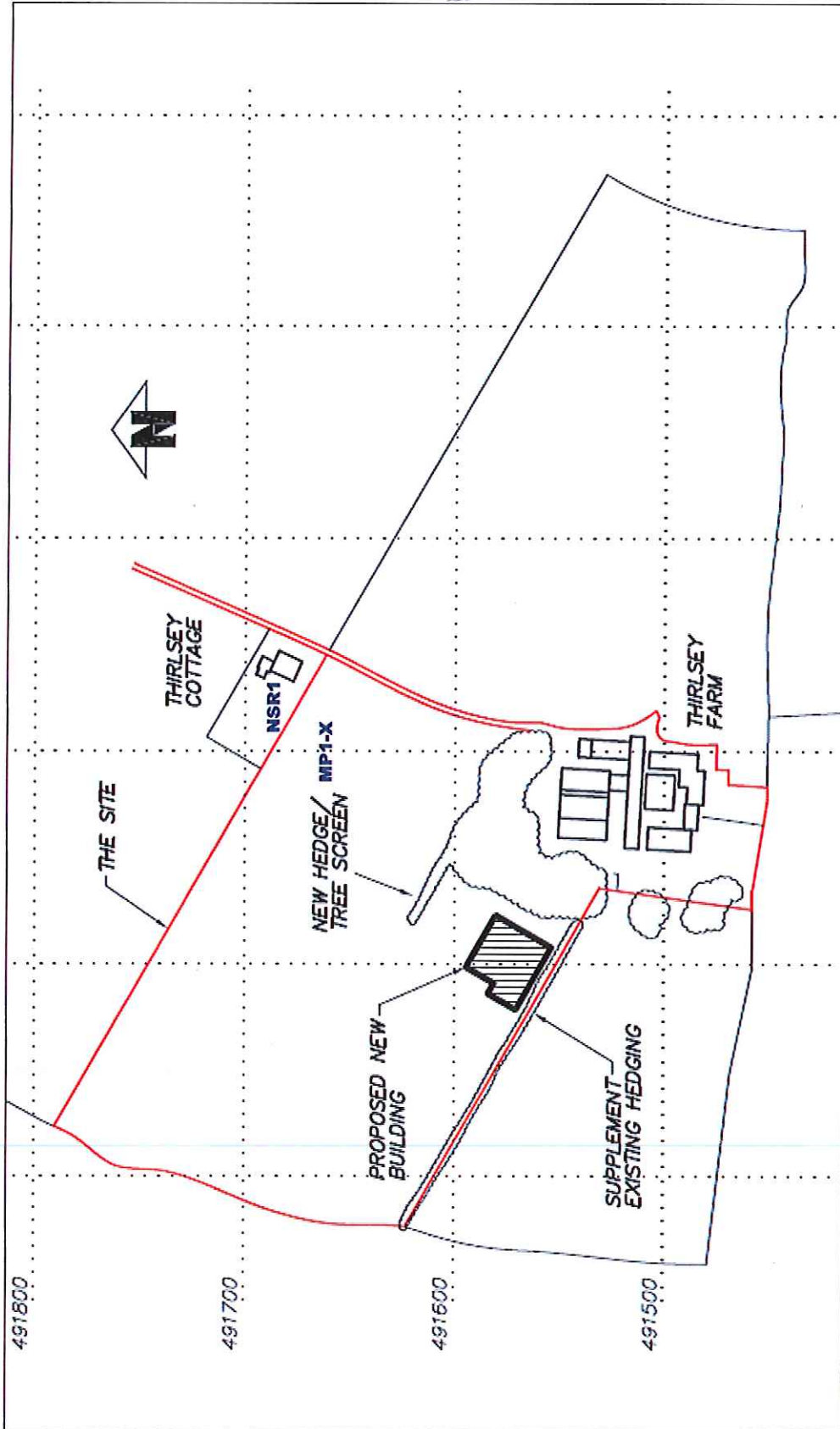
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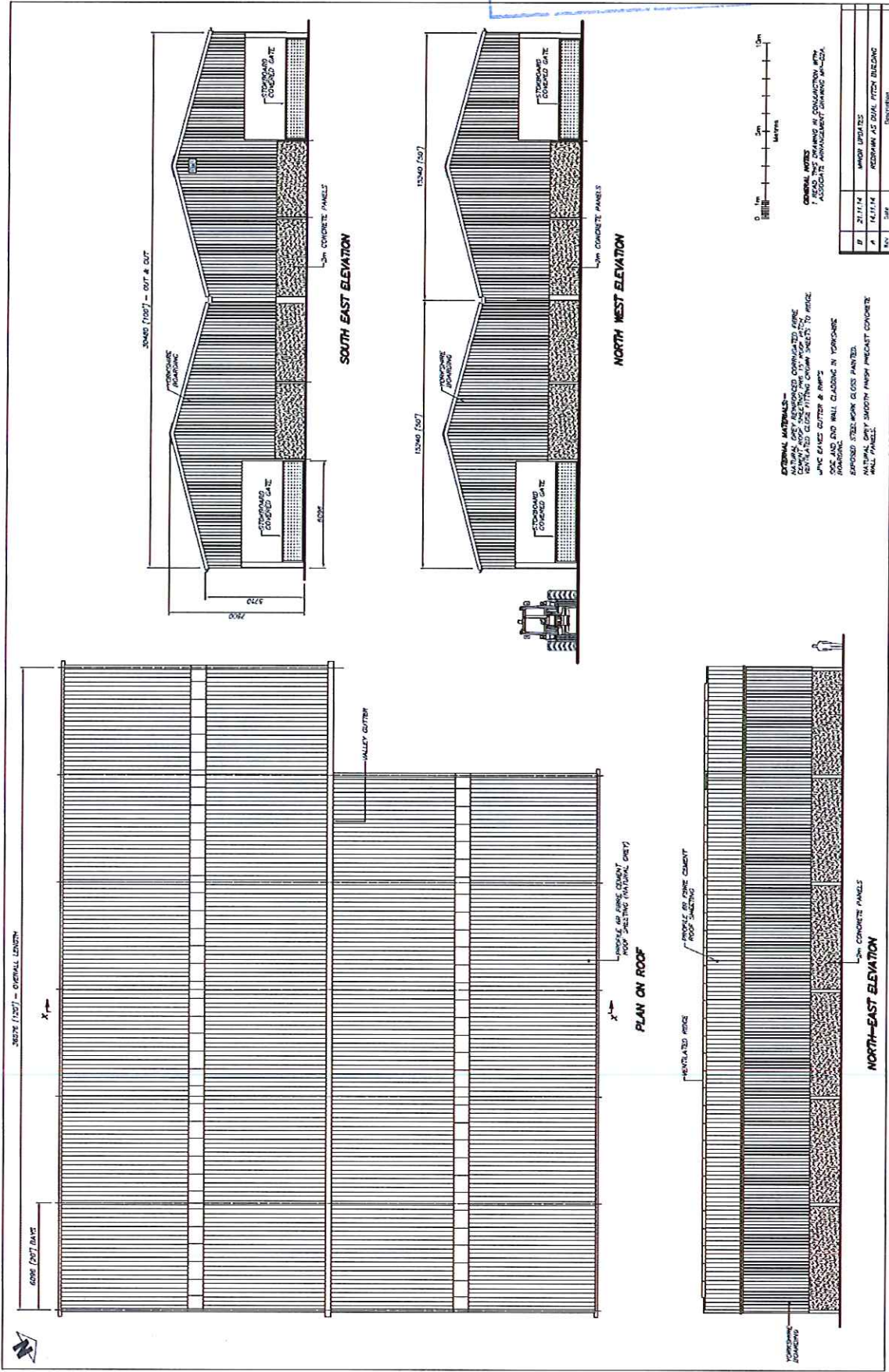
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APPENDIX 2  
ANNOTATED SITE LOCATION PLAN



# APPENDIX 2 PROPOSED BUILDING PLAN

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- EXTERNAL MATERIALS:**
- ALUMINUM GRAY ANODIZED CORRUGATED IRON
  - CONCRETE ROOF PANELS
  - 100mm CONCRETE PANELS
  - 3m CONCRETE PANELS
  - UPVC RAISED GUTTER & DRAIN
  - ROOF INSULATION
  - ROOF INSULATION
  - EXPANDED STEEL WORK GLOSS PAINTED
  - NATURAL GRAY SMOOTH FINISH PRECAST CONCRETE WALL PANELS

**GENERAL NOTES:**

- 1. READ THIS DRAWING IN CONJUNCTION WITH ASSOCIATE ARCHITECTURE DRAWING M-100A.

No.	Date	Description
01	27/11/14	ISSUED FOR TENDER
02	14/11/14	REVISION AS PER ARCHITECT'S COMMENTS

**Maria Ferguson MRTPI  
Maria Ferguson Planning  
Hunter Hill  
Crakehall  
Bedale  
North Yorkshire  
DL8 1LA**



**Planning Application  
For proposed Pig Unit  
Thirsley Farm, Silpho,  
North Yorks.**

**Appraisal of Odour Management**



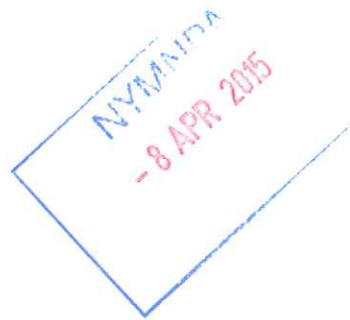
**ELLIOTT**  
Environmental Surveyors

**Prepared by:  
TTW Elliott CEnv FRICS  
Elliott Environmental Surveyors Ltd  
Mallan House  
Bridge End  
Hexham  
Northumberland  
NE46 4DQ**

**EES15-007  
16<sup>th</sup> March 2015**

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2.1 The Current Agricultural Business .....	3
2.2 Proposed Farming System.....	4
3. Appraisal of the Proposals .....	5



**APPRAISAL IN RELATION TO PLANNING APPLICATION  
FOR PIG UNIT,  
THIRSLEY FARM, SILPHO.**

## **1. Introduction**

This appraisal has been prepared on the instructions of Maria Ferguson MRTPI, Maria Ferguson Planning, in connection with a planning application to North Yorks Moors National Park for the erection of a new agricultural building at Thirsley Farm, Silpho (Reference NYM/2014/0806).

The purpose of the report is to provide information and appraisal in relation to the proposed pig unit, with particular reference to odour management.

Messrs Jonathan and Christopher Malthouse were interviewed on 16<sup>th</sup> March 2015, following review of the proposals and other environmental and physical information about the farm and its environs.

## **2. The Context of the Development**

### **2.1 The Current Agricultural Business**

Thirsley Farm, Silpho is a well-established farming arable and livestock farming business under the agricultural holding no. of 48/174/0006. It has been farmed by the Malthouse family for some 65 years and 148ha are owned and occupied by the family, trading as JC & AE Malthouse and Partners. The total area farmed is 190 ha (470 acres) which includes land held on long-term farm business tenancy. The farm workforce comprises Mr & Mrs Malthouse and son Christopher, who carry out all operations other than very specialist ones where contractors are used. The family live at the farmhouse at Thirsley.

The current farming system includes arable and livestock enterprises with some 350 acres in a rotation of oilseed rape, winter barley and winter wheat (also beans this year), with the remainder kept in grassland, either permanent where ploughing is not possible, or temporary grass and fodder crops for the sheep. There is also a small area of woodland, Thirsley Plantation, at the northern end of the farm and a small tree belt close to the farmstead. There is a sheep enterprise with 400 mule ewes producing fat lambs.

The local geology is limestone, with overlying soils of variable texture, but generally relatively well drained fine loams and fine loams over clays, with some areas of shallow brashy limestone soils.

The farm steading includes the farm house and a range of traditional buildings, together with a lambing building (12m x 14m), and storage building / grain store (22.5m x 25.4m) which holds 600 tonnes of grain. The main farm access track leads from the public road past the majority of the fields and Thirsley Cottage, to the farmstead. It also serves as the main farm access to the arable fields. Mains water is provided to the house and buildings.

The farm operates to a quality assurance system, in this case the Red Tractor Assurance Scheme, will involves annual external audit.

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## 2.2 Proposed Farming System

The proposal is to introduce a pig fattening unit, for which a general purpose building will be built. It will be specifically designed and adapted to be suitable for the pig unit, but will also be available for other general farming and storage uses.

The pig unit will be a contract fattening system, on a "bed and breakfast" system where the pigs and their feed are owned and provided by others. Under this system, young pigs are delivered to the new building as weaners, and are fattened until bacon weight (about 95-100kg weight) using the supplied feed, being removed from the farm for slaughter after about 4½ months old on a 2 batch system per annum. The feed will be delivered by specialist bulk tanker on a weekly basis, and transferred into a closed hopper silo. The pig and feed suppliers will monitor the pigs on a weekly basis, but with the building itself including feed hopper and other equipment, and routine daily and seasonal husbandry being provided by the Malthouse family as part of their normal farming activities.

The proposed building has overall dimensions of a maximum of 30m x 36.6m in two portal sections. The lower wall will be constructed from pre-cast concrete panels sealed to the overall concrete floor, with gate openings to allow access for livestock, personnel and tractors, and an external concrete apron, approximately 6m wide. The gates will be positioned at the ends of the scraped passages and the concrete will be laid with falls towards the building, or with raised edge lips to prevent runoff onto ground. Clean roof water will be collected and discharged separately to soakaway. The main walls for all elevations will be timber space boarding coupled with ventilated roof ridges to provide natural inlet and outlet ventilation to the required standard. The relatively high eaves will also contribute to natural ventilation.

The pigs will be kept in 10 pens of 100 pigs each, with a total of up to 1000 pig places. The main part of the pens will be deep bedded with straw, and the front section will form a scraped concrete passage which can be separated by gates in the pens. Pigs are generally clean animals and prefer to dung in cooler areas (i.e. the scraped passage). Water drinkers (mains water on an on-demand system to minimise waste and spillage) will be located in the scraped passages to prevent accumulations of dirty water and bedding. Dry feed will be delivered via closed auger-flights from the feed hopper, with a short drop into feed troughs in each pen.

The pens will be bedded daily with fresh straw, and the front passage areas will be scraped on a daily basis. The scrapings of farmyard manure will be cleared using a tractor-mounted mechanical farmyard scraper, and directly loaded into a sealed-bottom 10 tonne trailer which will sit on the external concrete apron; trailer wheels will thus be kept clean.

The trailer(s) will be covered and removed daily through the farmstead stackyard (which will further clean wheels if required) via the farm access road, to temporary manure heaps in the arable fields, to allow composting. Cleaning out at the end of each batch (i.e. twice yearly) will be using pressure washers and mechanical brushes, with the washings incorporated into the cleaned out bedding to soak it up, before leading into the trailers, for onward transport to the field heaps.

These heaps will be positioned in accordance with a Manure Management Plan for the farm (to control pollution), but will in any event be placed at least 400m from all residential properties (including Thirsley Cottage and the farmhouse) to protect residential amenity and prevent odour problems.

The heaps will remain until just after the next harvest, when they will be removed and spread by specialist contractors, using moving-belt spreaders, over a total of 1-2 days. The manure

will be quickly incorporated (normally within a week) into the topsoil during ploughing and other cultivations for the next arable crop. This is both to minimise odour generation and also to minimise nutrient loss. Rapid incorporation in the soil will also assist.

The Malthouses' are sensitive to residential amenity and would endeavour to avoid spreading in wind or weather conditions which might give rise to a greater risk of odours being generated near residential properties. They would keep a diary of manure movements and also maintain a complaints procedure.

They are prepared to formalise these management measures in an Odour Management Plan, which would accompany the Manure Management Plan. The standards to be applied include their own farm Assurance Scheme, DEFRA Codes of Practice for Livestock, Water and Air, and the NFU / EA Pig Industry Good Practice checklist which sets out best available techniques for reducing odours from pig production.

### **3. Appraisal of the Proposals**

The proposals will provide an additional livestock enterprise at Thirsley Farm as part of the ongoing development of the established agricultural business, namely a pig fattening unit on a contract system. This would be housed in the new building using home-produced straw for bedding, and the manure would be stored and spread on the holding for the benefit of the arable crops. The building would also be used for other purposes in between the batches of fattening pigs.

The system will be established and run in accordance with good practice and best available techniques, in order to minimise the risk of odour generation. Straw bedding will be used for the pigs, with concrete passages scraped daily and farm yard manure and washings removed to temporary field heaps remote from residences using sealed-bottom and covered trailers. These will be sited and the manure spread in accordance with a Manure Management Plan, to be produced.

The odour management measures described in the proposals will be formalised in an Odour Management Plan, (following the Environment Agency template). These will include the measures to minimise emissions from buildings, from manure storage, and to minimise emissions from manure spreading, and for monitoring and review.

T Elliott CEnv FRICS  
Elliott Environmental Surveyors Ltd  
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