

ENVIRONMENTAL STATEMENT

**ERECTION OF 2 No. ADDITIONAL POULTRY UNITS TOGETHER WITH 4
NO. FEED BINS, CONCRETE APRON, DIRTY WATER TANK AND A
DRAINAGE ATTENUATION POND AT BYRN THOMAS POULTRY UNIT,
PENYBONT, LD1 5SW**

BEN OWENS

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CHAPTER 1

1. INTRODUCTION

- 1.1 This Environmental Statement has been commissioned by Mr B Owens of Bryn Thomas, Penybont, Llandrindod Wells, Powys, LD1 6SW.
- 1.2 The Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017 provide for the submission of an environmental statement for certain types of development. In terms of intensive livestock units involving poultry, Schedule 1, Para 17a of the 2017 Regulations require an Environmental Statement to be submitted with any planning application which exceeds a guideline number of 85000 places for broilers.
- 1.3 This report has been prepared by Ian Pick. Ian Pick is a specialist agricultural and rural planning consultant. He holds a Bachelor of Science with Honours Degree in Rural Enterprise and Land Management and is a Professional Member of the Royal Institution of Chartered Surveyors, being qualified in the Rural Practice Division of the Institution.
- 1.4 Ian Pick has 23 year's experience specialising in agricultural and rural planning whilst employed by MAFF, ADAS, Acorus and most recently, Ian Pick Associates Limited.
- 1.5 Copies of this Environmental Statement are available from the agents, Ian Pick Associates Ltd at a cost of £50 for a paper copy of £10 for a CD copy.

CHAPTER 2

2. ENVIRONMENTAL IMPACT ASSESSMENT

Regulatory Context

- 2.1 The requirements of Environmental Impact Assessment are provided within the Town and Country Planning (Environmental Impact Assessment) (Wales) Regulations 2017. These are referred to as the EIA regulations within this document. The EIA regulations require that any development which is listed in Schedule 1 be subject to EIA.
- 2.2 The proposed development falls within the definition of Schedule 1, ‘Installations for the intensive rearing of poultry or pigs’ as it exceeds the threshold of 85000 broilers and therefore EIA is mandatory.

Assessment and Reporting Methodology

- 2.3 Following identification of environmental effects, technical assessments were carried out in order to predict potential effects associated with the development and where necessary proposed measures to mitigate the effects. These assessments are contained within the Environmental Statement.

The Environmental Statement

- 2.4 The Environmental Statement has been prepared to accompany an application for planning permission for the erection of 2 No. additional broiler units. The application has been submitted to Powys County Council under the terms of the Town and County Planning Act 1990.
- 2.5 The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017 require that an Environmental Statement should include at least the following information:
- A description of the development including:
 - A description of the location of the development
 - A description of the main characteristics of the whole development and the land use requirements during the construction and operational phases.
 - A description of the main characteristics of the operational phase of the development (in particular any production process)
 - An estimate by type and quantity, of expected residues and emissions.
 - A description of the reasonable alternatives studied by the developer which are relevant to the proposed project and its specific characteristics, and an indication of the main reason for selecting the chosen option.
 - A description of the current state of the environment (baseline scenario)
 - A description of the factors likely to be significantly affected by the development.
 - A description of the likely significant effects of the development on the environment resulting from
 - The construction and existence of the development

- The use of natural resources, in particular land, soil, water and biodiversity.
- The emission of pollutants, noise, vibration, light, heat and radiation, the creation of nuisances, and the disposal and recovery of waste.
- The risks to human health, cultural heritage or the environment
- The accumulation of effects with other existing and / or approved projects.
- The impact of the project on the climate and vulnerability of the project to climate change
- The technologies and substances used
- A description of the forecasting methods or evidence used to identify and assess the significant effects on the environment including any difficulties encountered compiling the required information.
- A description of the measures envisaged to avoid, prevent, reduce or, if possible, offset any identified significant adverse effects on the environment. That description should explain the extent to which significant adverse effects on the environment are avoided, prevented, reduced or offset, and should cover both the construction and operational phases.
- A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and / or disasters which are relevant to the project concerned. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.
- A non-technical summary of the above.

Scoping

2.6 A formal scoping opinion has not been requested from the Local Planning Authority. The scope of the Environmental Statement has been based on the scoping of the Environmental Statement in relation to application reference 18/0475/FUL.

- Ecological Assessment including Phase 1 Habitat Assessment and Ammonia Impact Assessment.
- Noise Assessment to BS4142.
- Odour Assessment including dispersal modelling
- Dust Assessment

Subjects Scoped Out

Climate Change

- 2.7 UK farms presently amount to 45.6 million tonnes of carbon dioxide (CO₂) equivalent a year – about one-tenth of UK GHG emissions. But in stark contrast to the rest of the economy only 10 per cent of this is CO₂. Around 40% is nitrous dioxide (N₂O) and 50% is methane (CH₄).
- 2.8 Current poultry production in the UK is responsible for a fraction of the Greenhouse Gas emissions associated with red meat production, because of the methane emitted as a consequence of ruminant production systems. Compared to other meat production systems, poultry produce approximately half the GHG emissions per kilo of pork and approximately a fifth the Greenhouse Gas emissions per kilo of red meat, with substantially higher feed conversion figures than cattle or pigs for both intensive and extensive systems.
- 2.9 Methane emissions are nearly all associated with manure storage (poultry digestion does release some methane but it is relatively negligible). The revised proposals involve the removal of the of the manure from the site by specialist contractors, with no on site storage proposed.
- 2.10 The proposals are for a small-scale poultry unit and as such climate change impacts are negligible and have been scoped out.

Contributors to the Environmental Statement

- 2.11 The team of consultants involved in the EIA are listed in table 2.1 below. Each was selected for their technical services and expertise in their respective fields.

Table 2.1

Chapter	Consultants
1. Introduction	Ian Pick Associates Ltd
2. EIA Process	Ian Pick Associates Ltd
3. Description of Development	Ian Pick Associates Ltd
4. Alternatives	Ian Pick Associates Ltd
5. Planning Policy Context	Ian Pick Associates Ltd
6. Potential Environmental Effects	Ian Pick Associates Ltd
7. Ecology and Ammonia Deposition	Craig Emms; Ecology; AS Modelling and Data
8. Noise, Odour and Dust	Matrix Acoustics; AS Modelling and Data.
9. Details of Consultation	Ian Pick Associates Ltd
Non-Technical Summary	Ian Pick Associates Ltd

Forecasting Methods

- 2.12 The forecasting methods used within this assessment are detailed within the individual chapters and assessments.
- Ecology Issues are assessed using the methodology contained within Handbook for Phase 1 habitat survey: a technique for environmental audit (Joint Nature Conservation Committee, 2010) and the current guidance on survey methods from the Chartered Institute of Ecology and Environmental Management (Guidelines for Preliminary Ecological Appraisal. CIEEM, 2012). The Habitat Suitability Index was calculated following ARG UK advice note 5 (Amphibian and Reptile Groups of the United Kingdom, 2010).
 - Off Site Ecological issues associated with ammonia and nitrogen deposition have been assessed in accordance with obtained from the Environment Agency's horizontal guidance, H1 Environmental Risks Assessment, H1 Annex B - Intensive Farming.
 - Noise is forecast using BS4142:2014.
 - Odour Assessment is forecast based on Environment Agency IPPC permitting guidance for odour modelling - Environment Agency H4 Odour Management Guidance 2011
 - Air Quality and Dust is forecast based on DEFRA Project: AC0104 and DEFRA LAQM (TG16).
 -

Assessment of Significance of Environmental Effects

- 2.13 In terms of the potential environmental effects, these have been assessed in accordance with the significance criterion outlined below. The assessment of significance within each subject chapter of the Environmental Statement has been informed corresponding technical assessment within the Appendices.

None	The development will not produce any effects beyond those which may be experienced within the current farming regime.
Low	There will be an effect, however this will be localised and will not impact on environmental and other features to their detriment when relating to existing uses (e.g. distance too far)
Medium	There will be an effect which will impact on environmental features, but not significantly.
High	A significant effect.
Positive	Has a benefit.

CHAPTER 3

3. DESCRIPTION OF DEVELOPMENT

Project Description

- 3.1 The applicants have submitted a planning application to Powys County Council for the erection of 2 No. additional poultry buildings and associated infrastructure at Bryn Thomas Poultry Unit (see location plan at **Appendix 1**). The elements of the development are shown within the table below.

Table 3.1.

Element	Description
New Poultry Houses 3 & 4	Erection of 2 No. new poultry houses measuring 103.652m x 24.69m with an eaves height of 3m and a ridge height of 6.318m with control rooms and door canopies attached to the east elevation measuring 14.345m x 3.048.
Feed Bins	Installation of 4 No. Feed Bins with a diameter of 3.5m and a height of 8.6m.
Dirty Water Tanks	Installation of 1 No. additional dirty water tank certified under the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021.
Concrete Apron	An extension to the concrete apron measuring 1750 sq m.
Attenuation Pond	Excavation of an attenuation pond for sustainable drainage.

- 3.2 The proposed buildings will be clad with a polyester coated profile sheeting for the walls and roof. The finished colour of the walls and roof will be olive green.
- 3.3 The proposed additional buildings are both identical and will have pan feeders, nipple drinkers and indirect heating. The buildings will be ventilated with high-speed roof mounted ventilation fans.
- 3.4 The ventilation, heating and feeding systems are all fully automated and controlled by a computer system within each poultry house. The system is alarmed for high and low temperature, feeding system failure and power failure.
- 3.5 The proposed buildings will operate as a broiler rearing unit, rearing chicks from day old top finished table weight.
- 3.6 The proposed broiler units will operate on an all-in all-out basis, with 52,000 birds per building, per crop, on a 48-day growing cycle, including a 10-day cleanout period. Thinning is undertaken with each crop from day 30 which

provides the remaining birds with further space. The buildings are cleared of birds at day 37 and 38.

- 3.7 During the growing cycle temperature is controlled within the buildings. The temperature starts at 32°C on day 1 of the cycle reducing to 18°C over the growing cycle. The temperature is controlled by the heating and the ventilation system.
- 3.8 At the end of each flock cycle, the buildings are cleaned out and the manure removed using bobcat type machines and loaded directly in waiting vehicles, which are sheeted and the manure removed from the site for disposal using specialist contractors, Gamber (see letter at Appendix 2). Should a manure contingency be required, manure can be temporarily stored within a concrete floored building at Bryn Thomas.
- 3.9 Following manure removal, the buildings are washed out with high pressure power-washers and prepared for the incoming flock.

External Lighting

- 3.10 The development does not require 24-hour external lighting. There are 3 days over each flock cycle, being days 30, 37 and 38 when night time catching operations will be undertaken and lighting on the site will be required in the form of directional flood lighting above the catching doors. Outside of the catching periods, 24-hour lighting is not required. Motion sensor trigger lighting will be provided for any staff needing to visit the site during hours of darkness.

Mitigation within the Project Design

- 3.11 Mitigation is inherent within the project design. The proposal is for the development of a poultry unit and requires an Environmental Permit in order to operate which is issued by NRW. The requirements of the Environmental Permit insist on the site being designed to Best Available Techniques (BAT). The proposed buildings are also required by the EP to be sealed and drained into a certified dirty water containment system which essentially removes any potential for contaminated water escaping from the site.

Climate Change

- 3.13 Schedule 4 of the 2017 Regulations requires at 5(f) requires the ES to include a description of the likely significant effects of the development on climate and the vulnerability of the project to climate change. Climate change has been scoped out for detailed assessment.

Construction Phase

- 3.14 The construction phase of the proposed development will extend to approximately 26 weeks. This phase involves the following elements.
- Stripping of the topsoil and levelling of the subsoil to create a level development area using a tracked dozer.
 - Importation of stone, levelling and compacting to create a sub-base.
 - Preparation of concrete foundation pads for steelwork
 - Erection of steelwork and cladding
 - Concreting of the building floors and concrete aprons.
 - Fitting of the buildings and installation of equipment.
- 3.15 The construction materials will be delivered into the site using HGV vehicles. Stone will be delivered using 8-wheel rigid quarry lorries; Concrete using 6 wheel rigid ready mix concrete lorries; and steel framework and sheeting using articulated lorries with flatbed trailers.
- 3.16 The proposal is a permanent development and the estimated design life of the buildings is in excess of 50 years.

Characteristics and Production Processes

- 3.17 The use of the proposed buildings is for the rearing of day-old broiler chickens through to finished table weight.

Expected Residues and Emissions

- 3.18 The proposed broiler farm requires a permit under the NRW Environmental permitting regime.
- 3.19 Expected residues and emissions from the site are limited to:
- Airbourn emissions in the form of odour, ammonia and nitrogen
 - Noise emission from mechanical plant
 - Production of waste in the form of poultry manure and dirty water.

CHAPTER 4

4. CHOICE OF LOCATION / ALTERNATIVE SITES

- 4.1 The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2017 require an Environmental Statement to cover alternatives studied by the applicants.
- 4.2 This proposal is for the expansion of an existing poultry unit on the site. The existing poultry site is bounded to the west by an existing stream, precluding expansion to the west and by the public highway to the east, precluding expansion to the east. The only options for expansion were to the south of the existing units, or to the north of the existing units.
- 4.3 Consideration was made to siting the proposed buildings to the south of the existing units; however, this location was discounted as it would involve significant earthworks to create a level base, and also the removal of the south field boundary hedgerow to facilitate the development.
- 4.4 In the light of the constraints of the southern site, it was proposed to site the new buildings on the northern side. This location is level, and does not require hedgerow removal to facilitate the development. The proposed location was therefore considered to be the most appropriate location for the development.

CHAPTER 5

5. PLANNING AND POLICY FRAMEWORK

Introduction

- 5.1 This chapter identifies planning policy relevant to the proposed development and the application site, together with an assessment of the development proposal against the planning policy and guidance.
- 5.2 The proposed development has been prepared having regard to national and local policy and guidance.
- 5.3 At a national level, planning policy is provided by Planning Policy Wales, 11th Edition 2021.
- 5.4 At a local level, planning policy is provided in the form of the Adopted Powys Local Development Plan (2018).

Powys Local Development Plan 2018

- Policy DM2 The Natural Environment
- Policy DM4 Landscape
- Policy DM6 Flood Prevention and Land Drainage
- Policy DM13 Design and Resources
- Policy DM14 Air Quality Management
- Policy E2 Employment Proposals on Non-Allocated Employment Sites.
- Policy E6 Farm Diversification
- Policy T1 Travel, Traffic and Transport Infrastructure

Planning Policy Wales

- Planning Policy Wales (11th Edition 2021)
- Technical Advice Note 5 – Nature Conservation and Planning (2009)
- Technical Advice Note 6 – Planning for Sustainable Rural Communities (2010)
- Technical Advice Note 11 – Noise (1997)
- Technical Advice Note 12 – Design (2016)
- Technical Advice Note 18 – Transport (2007)
- Technical Advice Note 23 – Economic Development (2014)
- Technical Advice Note 24 – The Historic Environment (2017)

CHAPTER 6.

6. POTENTIAL ENVIRONMENTAL AFFECTS

6.1 The following potential environmental affects have been considered.

- Ecological Assessment including Phase 1 Habitat Assessment and Ammonia Impact Assessment.
- Noise Assessment to BS4142.
- Odour Assessment including dispersal modelling
- Dust Assessment

Ecology & Ammonia Deposition

6.2 Ecology is assessed within the Chapter 7, and the associated Phase 1 Habitat Survey at **Appendix 3** and the Ammonia Impact Assessment at **Appendix 4**.

6.3 The scope of the ecological assessment relates to the full development described in Chapter 3. The site was surveyed following the methodology contained in the Handbook for Phase 1 habitat survey: a technique for environmental audit (Joint Nature Conservation Committee, 2010) and the current guidance on survey methods from the Chartered Institute of Ecology and Environmental Management (Guidelines for Preliminary Ecological Appraisal. CIEEM, 2012). The Habitat Suitability Index was calculated following ARG UK advice note 5 (Amphibian and Reptile Groups of the United Kingdom, 2010).

6.4 The Ammonia dispersal and deposition report is based on the emissions from the proposed poultry houses and has been conducted in accordance with the Environment Agency's "horizontal" guidance, "H1 Environmental Risks Assessment," "H1 Annex B"; "Intensive Farming."

Noise and Odour

6.5 Noise is assessed in Chapter 8, and within the Noise Impact Assessment at **Appendix 5**. The scope of the noise assessment includes all potential noise sources arising from the operation of the proposed development described in Chapter 3. The assessment has been prepared in accordance with BS4142:2014.

6.6 Odour is assessed in Chapter 8, and within the Odour Impact Assessment at **Appendix 6**. The odour assessment is based on the impacts of the poultry buildings throughout the duration of the flock cycle, and during the cleanout process. The odour impact assessment has been prepared in accordance with the Environment Agency H4 Odour Management Guidance 2011.

Manure Disposal Activities

6.7 Manure disposal is assessed in Chapter 8. Manure management proposals are through export of the manure by a specialist contractor with a contingency for storage within the covered manure store at Bryn Thomas.

Dust

- 6.8 Dust is assessed in Chapter 8. The proposals are assessed against the results of DEFRA project AC0104 and DEFRA LAQM TG16.

CHAPTER 7.

7. ECOLOGY AND AMMONIA DEPOSITION

Baseline Conditions

- 7.1 A phase 1 Habitat Survey has been undertaken on the site to determine baseline ecological conditions on the site. The Phase 1 Habitat Survey relates to the full development as described in Chapter 3. The full Phase 1 assessment is contained at **Appendix 3**.
- 7.2 The site was surveyed following the methodology contained in the Handbook for Phase 1 habitat survey (Joint Nature Conservation Committee. 2010. *Handbook for Phase 1 habitat survey: a technique for environmental audit*. JNCC, Peterborough, UK) and the current guidance on survey methods from the Chartered Institute of Ecology and Environmental Management (CIEEM. 2012. *Guidelines for Preliminary Ecological Appraisal*. CIEEM, Winchester, UK). The Habitat Suitability Index for great crested newts was calculated following ARG UK advice note 5 (Amphibian and Reptile Groups of the United Kingdom, 2010).
- 7.3 The Phase 1 Habitat Survey provides evidence that the site is not as a whole of sufficient ecological value to warrant whole-scale protection from the development. The sites habitats which will be affected by the works are common and widespread and are considered to be of low intrinsic biodiversity value.

The Development Proposal

- 7.5 The development proposal will introduce an intensive poultry farming operation onto the site. The ecological assessment provided at **Appendix 3** confirms that the application site itself is of low intrinsic biodiversity value.
- 7.6 Intensive poultry farming enterprises have the potential to create increased levels of ammonia and nitrogen within the atmosphere in the locality, which can in turn create negative impacts on sites of nature conservation importance, for example, Special Areas of Conservation (SAC's), Sites of Special Scientific Interest (SSSI), Ancient Woodlands and Local Wildlife Sites.
- 7.7 An assessment of potential impacts of ammonia and nitrogen deposition to protected ecological sites is required, if there are Ancient Woodlands or Local Wildlife Sites within 2km, SSSI's within 5km or SAC sites within 10km. There are a number of areas within 2 km of Bryn Thomas that are designated as Ancient Woodlands (AWs). Further afield, there are eleven areas designated as Sites of Special Scientific Interest (SSSIs) and parts of the River Wye Special Area of Conservation (SAC) within 5 km of the site. There are also some areas designated by Natural Resources Wales as ammonia sensitive AWs that are within 5 km of Bryn Thomas.

- 7.8 This proposal seeks to cease the use of the existing buildings as older style flat deck laying units, and implement a new use on the site for broiler rearing. The existing egg laying units are dated and have a high ammonia emission, generally due to the storage of the manure from the full 48-week flock cycle within the shed.
- 7.9 Detailed modelling of the existing and proposed scenarios has been undertaken within the modelling report at **Appendix 4**. The detailed ammonia modelling report at Appendix 4 shows that under the proposed scenario, in all cases, the process contribution to ammonia levels and nitrogen deposition rates would be reduced from current levels at all sensitive ecological sites within the screening distances.

Cumulative Impacts

- 7.10 Cumulative ammonia impacts of this proposal are not required to be considered as the proposals represent an improvement / betterment scenario, when compared with the existing operational poultry farm.

Summary

- 7.11 The Phase 1 Habitat Survey provides evidence that the site is not as a whole of sufficient ecological value to warrant whole-scale protection from the development. The sites habitats which will be affected by the works are common and widespread and are considered to be of low intrinsic biodiversity value, subject to the development being undertaken with a Great Crested Newt License from Natural Resources Wales.
- 7.12 The ammonia modelling, with abatement offered by the change in system confirms that the proposals represent an improvement in ammonia and nitrogen deposition rates to protected sites in the surrounding area.

Assessment Level Assuming Mitigation

- 7.13 Mitigation is designed into the scheme through the use of the proposed air scrubbing system which is effective for scrubbing 90% of ammonia emissions from the proposed buildings. The overall assessment level based on the criteria outlined in section 2.13 of this report is **Positive – The proposal has a benefit.**

CHAPTER 8.

8. NOISE, ODOUR & DUST

Noise

Scope of the Assessment

- 8.1 A detailed noise assessment has been prepared by Matrix Acoustic Design Consultants to review plant noise generated from the proposed development. The full detailed analysis, which includes the results of a noise survey and acoustic calculations, are provided at **Appendix 5**. The Acoustic Assessment has been undertaken to BS4142:2014.

Baseline Conditions

- 8.2 A noise survey has been conducted to determine the typical background noise levels at the nearest dwellings to the proposed broiler units.

Assessment Summary

- 8.3 A noise survey has been conducted in order to establish representative typical background noise levels at the nearest noise sensitive receptors to the proposed additional poultry units at Bryn Thomas, Penybont; Figures 1 and 2.
- 8.4 For the assessment the mitigation measure of attenuators fitted to both the roof and gable end extract fans on the proposed additional poultry units (Sheds 3 & 4) that meet the insertion losses given in Table 1 have been included.
- 8.5 Via calculation the aggregate ventilation extract fan noise emissions from the proposed poultry units and corresponding BS4142 Rating Levels have been determined by calculation; Appendix B and Table 2.

The resultant Rating Levels are:

- Roof ventilation fans: at least 10dB below the typical background noise level during the day, evening and night, indicating a negligible noise impact
 - Emergency gable end fans: with the contribution of the gable end fans, which are only required during periods of hot weather or due to failure of the roof fans, the aggregate Rating Level is an imperceptible 1dB above the typical background noise level during the day. This indicates a low noise impact.
- 8.6 On the basis that the ventilation extract fan noise emission from the proposed additional poultry units (with the fitment of attenuators; Table 1) will not result in an adverse noise impact at the nearest noise sensitive receptors, we conclude that on noise grounds the proposed scheme is acceptable.

Cumulative Impacts

- 8.7 The Noise Impact Assessment is based on a background noise survey with noise meters positioned on close to the site to record the existing background noise levels in the locality. The noise assessment is therefore taking account cumulatively of all existing noise generating activity in the locality.

Noise Summary

- 8.8 The proposed development will result in a permanent effect, as the noise impacts of the development arise from the operation of plant throughout the lifespan of the development. The noise assessment is based on BS4142: 2014 and the associated rating levels in accordance with BS4142:2014 for noise is negligible.

Assessment Level Assuming Mitigation

- 8.9 The overall assessment level based on the criteria outlined in section 2.13 of this report is **Low - There will be an effect, however this will be localised and will not impact on environmental and other features to their detriment when relating to existing uses.**

Residual Impacts

- 8.10 The development will have a low impact on noise conditions and will be inaudible at nearby receptors at most times.

Odour Assessment

Baseline Conditions

- 8.11 The application site currently comprises an existing poultry farm which extends to 2 No. poultry houses used for egg laying and associated infrastructure, and accommodates up to 32000 birds.
- 8.12 The proposals result in the change of use of the existing poultry houses from egg laying to broiler production, and the erection of 2 No. additional poultry houses for broiler production. Post development, the site will be a broiler unit accommodating 181,000 birds.
- 8.13 The odour modelling report at **Appendix 6** provides a full assessment of the existing and proposed poultry operations on the site.

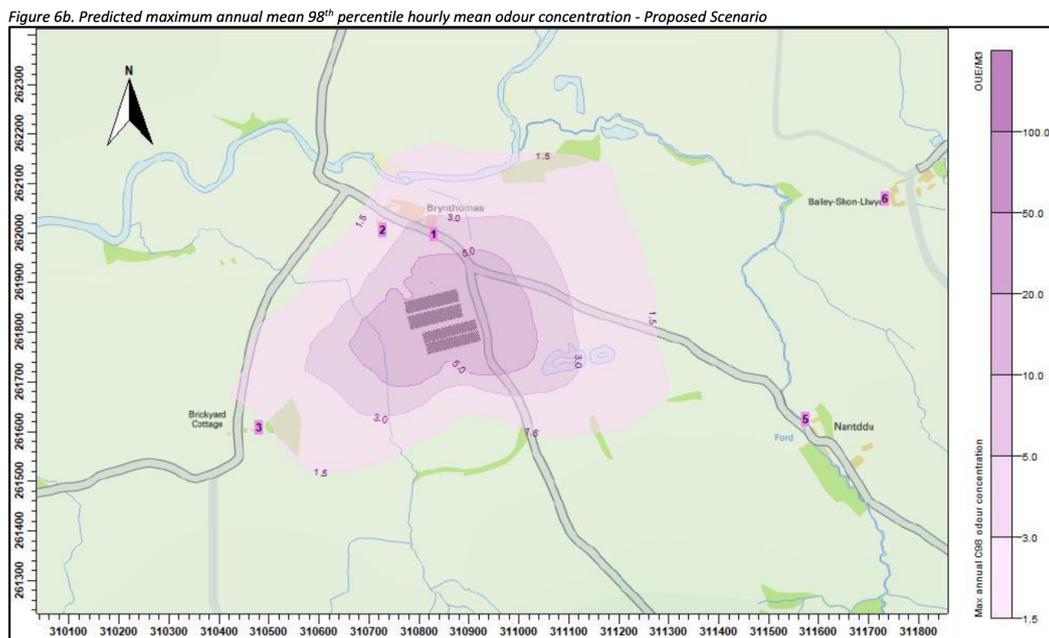
Scope of the Assessment

- 8.14 AS Modelling & Data Ltd. has been instructed by Mr. Ian Pick of Ian Pick Associates Ltd., on behalf of Ben Owens, to use computer modelling to assess the impact of odour emissions from the existing and proposed poultry houses at Bryn Thomas Poultry Unit, Penybont, LD1 5SE.

- 8.15 Odour emission rates from the existing and proposed poultry houses have been assessed and quantified based upon emission models that takes into account the likely internal odour concentrations and ventilation rates of the existing and proposed poultry houses. The odour emission rates so obtained have then been used as inputs to an atmospheric dispersion model which calculates odour exposure levels in the surrounding area.
- 8.16 The modelling predicts that at all residential receptors considered, odour exposures would be below the Environment Agency’s benchmark for moderately offensive odours, which is a maximum annual 98th percentile hourly mean concentration of 3.0 ouE/m. The modelling also shows a reduction in odour impacts when compared to the existing situation.

Cumulative Impacts

- 8.17 The Odour Impact Assessment at Appendix 6 predicts the impacts of the existing and proposed development at Bryn Thomas in isolation. The potential for cumulative impacts with the other existing and proposed intensive livestock units have been considered.
- 8.18 Odour impacts from poultry units are very localised impacts and limited to impacts within a few hundred meters of the poultry buildings. There is accepted modelling methodology available for robust assessment. The odour impact assessment at Appendix 6 models the odour impacts from the existing and proposed poultry houses at Bryn Thomas Poultry Unit. The image below shows the odour plume associated with proposed development taken from figure 6b of the odour impact assessment at **Appendix 6**.



- 8.19 The odour plume above shows the predicted impact of the proposed expanded poultry unit at Bryn Thomas.
- 8.20 Turning to further in combination impacts, the odour plume above shows that the 3 Odour Unit contour extends a maximum of 200m from the proposed buildings, depending on the wind direction, and the 1.5 odour unit contour

extends to approximately 350m from the proposed buildings. Therefore, in order for any other existing or proposed intensive livestock unit to have an in-combination odour impact with the proposed development, they would need to be in sufficiently close proximity for the 1.5 odour unit contours to overlap. It is therefore estimated that there would need to be a neighbouring intensive livestock unit of a similar scale within 700m of the site to act in combination from an odour prospective. The closest neighbouring ILU is at Neuadd, located 1.2km to the west. This level of separation is well beyond the estimated 700m distance where in combination impacts could occur.

- 8.21 It is concluded that there are no other schemes acting in combination with the proposed development from an odour prospective.

Odour Summary

- 8.22 The modelling predicts that, should the proposed development of the poultry unit expansion at Bryn Thomas proceed, the odour exposure would be below the Environment Agency/Natural Resources Wales benchmark for moderately offensive odours, which is a maximum annual 98th percentile hourly mean concentration of 3.0 ouE/m³, at all nearby residential receptors considered. The odour impacts of the proposed development are reduced when compared to the existing scenario.
- 8.23 The odour impacts of the development relate to its operation for the design life of the project, and therefore represent a permanent effect.

Assessment Level Assuming Mitigation

- 8.24 Mitigation is designed into the scheme through the use of the proposed air scrubbing system. The overall assessment level based on the criteria outlined in section 2.13 of this report is **Positive – The proposal has a benefit.**

Residual Impacts

- 8.25 The modelling shows that land within the immediate vicinity of the poultry unit will be subject to perceptible odours, however, there are no sensitive receptors (dwellings or occupied buildings) likely to be impacted by the proposed development.

Dust

- 8.26 The assessment of dust from poultry farms formed part of a DEFRA research project. DEFRA project AC0104. The summary of the DEFRA research project is shown in the text below.

“This work represents one of the most comprehensive studies to quantify PM emissions from poultry housing to date, comparing a total of eight farms. Large variations between farm management practises, lighting regimes, litter conditions, and meteorology contributed to variability in emissions, even for the same type of farm. However, the measurements undertaken as part of this study were also able to identify differences in concentrations and emissions of particles between different farm types. The broiler installations were associated

with the largest indoor air PM_{2.5} and PM₁₀ concentrations (655 µg m⁻³ and 2990 µg m⁻³, respectively) and the highest bacterial fungal counts. Concentrations for particulate matter and bioaerosols were the lowest at battery farms. In general, indoor particle concentrations increased during winter time and light periods, reflecting ventilation rate and bird activity as the dominant influences. On the other hand, emission factors increased slightly during light-time in the summer months, due to the increase in ventilation rate.

Chemical speciation measurements indicated that (i) NH₄NO₄ was not forming within the shed, (ii) the dominant inorganic species sourced from poultry material are Ca²⁺, K⁺ and Mg²⁺, and (iii) the key metals in the poultry sheds include Al, As, Ba, Cu (light only), Cr, Mn, Rb, Sr and Ti. We here derived, to our knowledge for the first time, poultry emission factors for aerosol chemical components (metals and major inorganic ions) and when compared against the NAEI suggest that between 0.1 – 4% (depending on compound) of the UK metal and inorganic ion emissions are derived from poultry house emissions. Bioaerosol concentrations in the building represent a risk to poultry workers in terms of respiratory allergy or disease, but the levels emitted are sufficiently diluted over a short distance from the building so as not to pose a risk to those living in the vicinity of poultry operations. PM₁₀ particulate levels were reduced to background levels by 100m downwind of even the highest emitting poultry houses, therefore are unlikely to pose a risk to those living in the vicinity of poultry operations.”

- 8.27 The results of the DEFRA research project demonstrated that emissions from poultry units in terms of particulate matter reduced to background levels by 100m downwind of the even the highest emitting poultry houses. The research shows that levels of particulate matter are sufficiently diluted over a short distance so as not to pose a risk to those living in the vicinity of poultry operations. The closest emission point within the application site is 400m from the closest residential receptor unconnected with the farm and therefore beyond the distance where dust issues can occur.

Human Health

- 8.28 Dust impacts of poultry units are well researched by DEFRA. DEFRA Project AC0104 confirms that dust levels reduce to background levels at 100m from the highest emitting poultry houses. DEFRA Local Air Quality Management (LAQM) Technical Guidance 16 (Feb 2018) provides screening criteria of where dust assessment is required for a poultry unit as follows:

“Poultry farms housing in excess of 400,000 birds (if mechanically ventilated) / 200,000 birds (if naturally ventilated) / 100,000 birds (if turkey unit) - Exposure within 100m from the poultry units”

- 8.29 The above screening criteria confirms that air quality assessment is required for poultry units, if the development exceeds 400,000 birds and there is a receptor within 100m. In this instance, the development falls well below the threshold for dust assessment.

Cumulative Impacts

- 8.30 DEFRA Guidance provided in LAQM TG16 (2018) and DEFRA Project

AC0104 confirm that dust impacts from even the highest emitting poultry units are reduced to background levels at 100m from the installation boundary. The closest neighbouring intensive livestock unit at Neuadd Farm is 1.2km distant, and therefore in combination dust impacts can be scoped out.

Dust Summary

- 8.31 The application site is located 400m from the closest sensitive receptor. The results of DEFRA project AC0104 confirmed with research that dust was diluted over short distances of 100m to normal background levels and therefore the proposal does not pose a risk of public health issues. This conclusion is further reinforced by DEFRA Local Air Quality Management (LAQM) Technical Guidance 16 (Feb 2018).

Assessment Level Assuming Mitigation

- 8.32 The overall assessment level based on the criteria outlined in section 2.13 of this report is **None - The development will not produce any effects beyond those which may be experienced within the current farming regime.**

Residual Impacts

- 8.33 None. The separation distance is beyond the 100m screening distance.

Manure Management

- 8.34 All manures and dirty water arising from the operation of the proposed development will be disposed of via export from the site by a specialist contractor. See **Appendix 2**. The removal of the waste removes any potential environmental impacts. A contingency for manure storage is available for storing within a concrete floored farm building at Bryn Thomas, in the unlikely event that the manure cannot be immediately exported.

CHAPTER 9.

9. DETAILS OF CONSULTATION

9.1 As part of the preparation of the Environmental Statement, consultation has been undertaken with the following:

Powys County Council – Local Planning Authority

Natural Resources Wales – Planning and Environmental Permitting

CADW

Welsh Water

Powys County Council Highways

Community Council

Local Residents

NON-TECHNICAL SUMMARY

- 1.1 This non-technical summary has been produced to summarise the issues, mitigation measures and effects relating to the proposed development of additional poultry buildings and associated infrastructure at Bryn Thomas Poultry Unit.
- 1.2 The proposed development is for the erection of 2 No. additional poultry buildings and associated infrastructure, as detailed in the table below.

Element	Description
New Poultry Houses 3 & 4	Erection of 2 No. new poultry houses measuring 103.652m x 24.69m with an eaves height of 3m and a ridge height of 6.318m with control rooms and door canopies attached to the east elevation measuring 14.345m x 3.048.
Feed Bins	Installation of 4 No. Feed Bins with a diameter of 3.5m and a height of 8.6m.
Dirty Water Tanks	Installation of 1 No. additional dirty water tank certified under the Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021.
Concrete Apron	An extension to the concrete apron measuring 1750 sq m.
Attenuation Pond	Excavation of an attenuation pond for sustainable drainage.

- 1.3 Each proposed poultry building will house 52,000 birds, with 104,000 additional birds proposed on the site, taking the total size of the poultry farm to 181,000 birds.

Assessment of Significance of Environmental Effects

1.4 In terms of the potential environmental effects, these have been assessed in accordance with the significance criterion outlined below.

- None** **The development will not produce any effects beyond those which may be experienced within the current farming regime.**
- Low** **There will be an effect, however this will be localised and will not impact on environmental and other features to their detriment when relating to existing uses (e.g. distance too far)**
- Medium** **There will be an effect which will impact on environmental features, but not significantly.**
- High** **A significant effect.**
- Positive** **Has a benefit.**

1.5 The scheme has been designed to take into account the potential environmental effects, with mitigation inherent in the project design. The scope of assessment included within the Environmental Impact Assessment includes the following:

- Ecological Assessment including Phase 1 Habitat Assessment and Ammonia Impact Assessment.
- Noise Assessment to BS4142.
- Odour Assessment including dispersal modelling
- Dust Assessment

1.6 The impact relating to these issues is summarised in the following sections.

Environmental Impact

Issue	Mitigation Measures	Affect Assuming Mitigation
Ecology & Ammonia Deposition	The ammonia report demonstrates that the	Low / Positive (not significant) The sites habitats which will be affected by the works are common and widespread and are considered to be of low intrinsic biodiversity value. The proposals have been assessed for

	change from egg laying to broiler production results in a reduction in ammonia emissions.	ammonia impacts to sites of nature conservation importance. The ammonia impacts of the development represent an improvement to current emissions.
Noise	Installation of attenuators to roof fans.	Low (not significant) The noise assessment concludes that the noise impacts of the development are negligible.
Odour	Installation of a High-Speed Roof Mounted Ventilation System.	Positive (not significant) The proposal is compliant with NRW odour thresholds and represents an improvement over the current situation.
Dust		None The proposal is beyond the distance where dust issues can arise.

- 1.7 In conclusion, the proposed poultry unit expansion at Bryn Thomas, Penybont will not produce any significant Environmental Impacts. From the information appraised through the Environmental Impact Assessment process, it is clear that the proposed development will have low impact on the environment taking into account the migration measures proposed.
- 1.8 No technical difficulties were encountered in preparing this Environmental Statement or assessing the impacts of the proposed development. The preparation of the Environmental Assessment has taken into account the results of UK environmental assessments.

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September 2021.**