BERRYS

PROPERTY | BUSINESS | PLANNING

APPENDIX 6:

ENERGY EFFICIENCY

IN RELATION TO

ENVIRONMENTAL PERMIT

BESPOKE APPLICATION

ON BEHALF OF

G & A POWELL

RTPI mediation of space · making of place

RICS

Contents

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1.0 Energy Usage

Energy Source	Use
Mains electricity	Lighting, ventilation, computer control systems, feed augers, water pumps
Ground Source Heat System	Heating sheds.
Diesel	Standby generator and backup electric system
Gas	Standby gas boilers and backup heating system

2.0 Heating

The correct environment for the birds is maintained in the sheds through a combination of heating using the ground source heat pump system and ventilation fans located in the roofs, side inlets and gable ends.

Each shed will be / is monitored by a computer system, which automatically controls and records the humidity and the temperature. Control sensors are checked regularly and kept clean so they are able to detect the temperature at the stock level. Ventilation rates are computer controlled to minimise, as far as the indoor requirements allow heat losses from the sheds. Most of the year the roof fans will provide adequate ventilation within the existing sheds, with the gable fans required during the latter stages of the cropping cycle and in very hot weather. Fans are fitted with back draft shutters to reduce heat loss.

The new sheds will be fully insulated with a U-Value of approximately 0.4 W/m2/°C to reduce condensation and heat lost. This insulation is contained within the existing poultry building.

The sheds will be constructed to ensure litter is dry and friable, and reduce the need to heat the sheds to keep the litter dry.

The sheds will be maintained in good condition, cracks and open seams will be repaired. The concrete flooring will be maintained and cracks will be repaired. Each shed will have a damp proof course. Nipple drinking system reduces spillage of water.

There is a backup gas boiler and heating system in case of a breakdown.

3.0 Electricity

The ventilation fans have been selected so that they are appropriate in power and size for the sheds. The computer control systems control the ventilation for maximum efficiency i.e. one fan operating at full capacity rather than two operating at half their capacity. The fans are regularly maintained, and cleared of debris.

Low energy light bulbs will be used in the control areas and stores. Fluorescent lights will be used in the sheds. A variable lighting period will be used during the crop cycle.

A diesel run back-up generator will be used in case of a power cut. This will have an automatic change over and will also swap back once the power shortage is over.

4.0 Fuel Oil

The standby generator will be regularly maintained in accordance with the manufacturers' instructions to ensure it operates efficiently.

5.0 Other (Ground Source Heat Pump System)

The heating in the broiler houses will be provided via a closed loop ground source heat system. The equipment for the ground source heat pumps will be located in a small renewables building to the front of the sheds. This system is maintained by the installation company.

6.0 Breakdown

A breakdown of delivered and primary energy consumption will be recorded and provided to Natural Resources Wales annually in the following format:

Energy Source Delivered MWh	**Energy Consumption Primary MWh**	**% of Total**
Electricity		
Oil		
Gas		
Other (Ground Source)		
Exported Energy	**MWh**	**Source**
	N/A	N/A