

SUSTAINABILTY STATEMENT



Proposed Pet Breeding Unit and Dwelling at Whale Drove, Crowland, Lincs

April 2015

Document Title : Sustainability Statement

1.0 Introduction

1.1 The entire Whale Drove project is being designed so that the properties are energy efficient and constructed to a high standard of sustainability.

1.2 The developer will adopt a number of environmental protocol considerations and objectives to ensure the proposals provide and deliver both minimum impact upon the environment but also a sustainable and enduring development.

1.3 Key measures relating to environmental sustainability have been identified for the proposed development. These include:-

- Reducing energy demand and energy efficiency of buildings
- Water conservation and management

- Sustainable construction and materials
- Waste recycling
- On site management
- Ecology
- On site growing of feedstock
- On site production of 'closed loop' horticultural compost
- On site Sewage disposal

1.4 Furthermore, it is proposed that the development will attain a minimum 10% reduction in carbon emissions on site by the adoption of low carbon technology and renewable energy where practically achievable.

1.5 Background

The applicant (Mr Ian Bruce) is a specialist breeder of pet rabbits with a current facility at Allens Bridge Farm at Throckenholt - situated some 4 miles to the East of the application site.

Last year, Mr Bruce's parents both passed away and the Throckenholt property is to be sold off - as a result, the business needs to relocate. In any event, the pet breeding (mainly rabbits) facilities at Allens Bridge Farm are no longer fit for purpose and a new purpose built facility is required if the business is to continue. Aside from Mr Bruce, a further part time assistant is employed at the facility - the new proposal will enable the business to expand to satisfy the demand for pet rabbits which will create further full and part time posts. This type of business can only be operated successfully in a tranquil countryside location - an industrial unit (in a Town for instance) would not satisfy the functional needs of the business. In order to be sustainable and to provide for an appropriate external environment for the animals, the facility requires an area of adjacent grassland - as shown on the site layout drawing.

It is essential, from an operational, security and sustainability point of view, that the owner/operator of the business is 'on site' - hence the proposal to build a dwelling alongside the commercial activity. This is essentially a 'live-work' proposal related to an existing local business activity that has proved, over time, to be viable and therefore commercially sustainable.

The business will have two full time employees with one part time post.

2.0 Reducing Energy Use & Increasing Energy Efficiency of Buildings

2.1 The proposed dwelling and workspace will produce 25% less CO₂ than buildings built to 2006 Building Regulation standards. This will be achieved by increasing the thermal performance of the building fabric by utilising Low Carbon technology and building to enhanced robust details to achieve high level of air tightness and controlled ventilation.

- All major electrical appliances (i.e. refrigerators, freezers, washing machines, tumble dryers, washerdryers and dishwashers) supplied with the dwelling and workspace must be Energy Saving Recommended.
- The house will be provided with secure external drying spaces.
- 100% of internal light fittings will be energy efficient.
- External space lighting and security will be energy efficient. (subject to economic and planning constraints)
- An Aerobic food waste digester will be installed to convert organic food waste into an additional fertilizer to be used on the site

- Passive ventilation systems will be used to minimise electrical consumption
- Light and movement sensitive external lighting
- A ventilated space for drying clothes should be provided within the house. This could be either an unheated space with good ventilation, or a heated space with adequate, controlled ventilation.

3.0 Water Conservation & Management

3.1 The site is within a flood plain and the Full Planning Application will be accompanied by a compliant FRA.

3.2 The developer will ensure the design of water drainage will embrace the principles of Sustainable Urban Drainage (SUDs) to manage flow in a sustainable manor and mimic the natural process.

3.3 Surface water will be directed away from buildings to soakaways to allow infiltration of water into the ground. The soakaways and basins will be carefully designed to contain flood water and ensure that both the development and adjoining land are not at increased risk of flooding.

3.4 Permeable paving to parking areas, and extensive areas of landscaping will further contribute to the natural drainage system.

3.5 The potable water consumption shall be designed to 125 litres or less per person per day. This can be achieved within the dwellings with water saving devices such as low flow cisterns, water restrictors and aerated spray taps and showers, and water metering.

3.6 The property will benefit from grey water harvesting.

4.0 Sustainable Construction & Materials

4.1 'A' rated materials components will be aimed for as assessed in the Green Guide for Specification (BRE). This will include constructions making up roof, external and internal walls, ground and upper floors and windows. By specifying materials that were A rated it reduces the environmental impact of the materials on our environment over their life cycle.

4.2 Where logistically feasible, materials will be responsibly sourced locally and from certified sources and accredited suppliers. PVCu windows are not specified within the development. All windows are treated timber from sustainable traceable sources. Materials and surface finishes have low toxic and pollutant content. The company aims to minimise NOx emissions and hence low emission/high efficiency boilers will be specified.

5.0 Recycling

5.1 The dwelling and workspace will be provided with 3 separate internal storage bins for waste recycling.

5.2 An Aerobic food waste digester will be installed to convert organic waste into a fertilizer to be used on the site.

5.3 Rabbit manure will be converted into a compost for use on the site.

6.0 Health & Wellbeing

6.1 By designing in features into the property, the developer will promote a variety of features which improve quality of life within the dwelling and workspace. The house and workspace is designed with good natural day lighting, reducing the need to use artificial lighting and increasing the potential for solar gain while preparing for any over-heating risks by using natural ventilation.

7.0 On Site Management

7.1 This site will be Considerate Contractor's Scheme registered. The purpose of this is to ensure commitment to best practice site management principles.

7.2 It will optimise site activity so that the mitigation of environmental impacts are of the highest regard. Monitoring the site processes and setting targets so that reductions can be made on the use of water and

energy, adopting best practice in respect of air pollution arising from site activities and over 80% of timber is recycled.

7.3 During the construction phase a site management plan will be developed. This will include measures for identifying, sorting and separating construction and demolition materials for re-use and recycling. The plan will also identify effective methods for minimizing construction waste.

8.0 Proposals

8.1 It is proposed that the min 10% reduction in carbon emissions will be achieved using “Low Carbon Technology” and/or “Onsite Renewable” energy options where practically achievable.

8.2 The house will be environmentally assessed at both the design and post construction stage and will be certified and provided a Code certificate that rates its environmental performance in accordance with The Code for Sustainable Homes.

8.3 In addition to this the home and workspace will be have an Energy Performance Certificate (EPC) to demonstrate their effectiveness in this regard.

8.4 The built forms of the home will meet and exceed current standards of insulation and incorporate measures to minimise energy use. Both the design of the home and workspace and the development layout together with the selection of materials is of key importance to the energy efficiency.

8.5 The Technologies to be considered for this site:-

- Waste Water Heat Recovery
- Flue Gas Heat Recovery
- Solar Thermal Hot Water Panels
- Solar Photo Voltaic Electricity Panels
- Wood Burning Stoves
- Air source heat pump
- Grey water harvesting
- Potable water from abstraction

8.6 A two way electrical metering system will be installed in order that the significant excess electricity generated by the Solar PV panels is fed back into the Grid

9.0 Conclusion

9.1

People working in rural areas are sometimes presumed to have a disproportionately negative impact on the environment. The argument goes that more people use their cars to get around and travel longer distances, thereby making a relatively large contribution to climate change. This assumption can contribute to planning practice that limits development in rural areas on environmental grounds. However, there is no robust evidence to suggest that there is any systematic difference between the contributions to global warming of rural and urban areas. For example, a look at the travel to work patterns across rural and urban communities shows that they are very similar, contrary to arguments sometimes used against economic development in rural areas.

A study by the Chartered Management Institute predicts that by 2018 the majority of businesses will be based from home. Sixty five per cent of businesses expect working from home to be commonplace as a way to reduce the carbon footprint and 73 per cent suggest work-life balance will be the key to job choice. This trend is certainly most advanced in rural areas.

By providing a combination of renewable energy/low carbon technologies the developer can select the most desired options to suit specific requirements so that the new home and workspace can be designed, built and operated sustainably.

By not relying on one technology this will also allow the development to benefit from multiple forms of renewable energy or low carbon technology. The entire development will be essentially 'off grid'.

This carefully considered proposal will create opportunity and improve the business prospects for an existing and viable rural based business thus enhancing the rural economy and will not have any negative impacts on the open countryside setting.

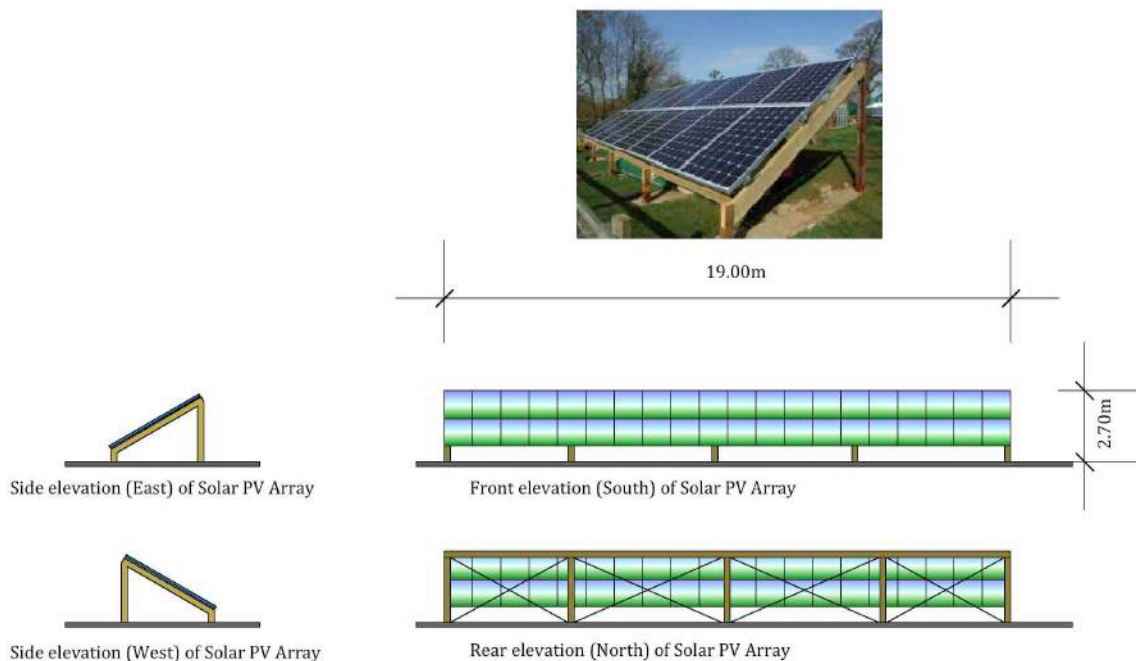
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June 2014

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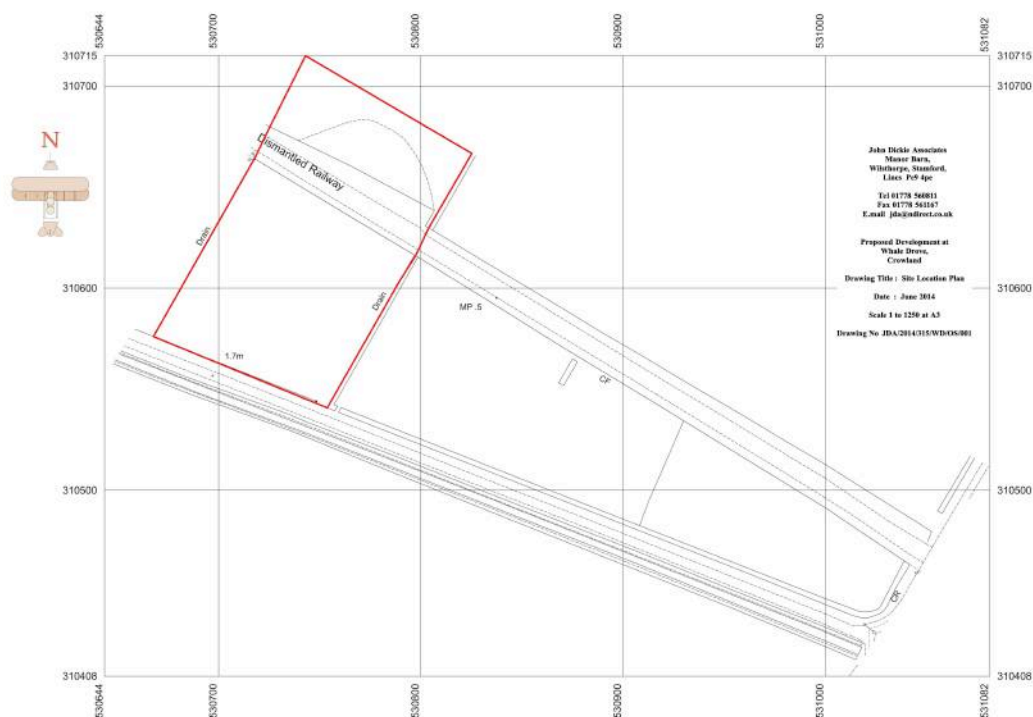
Appendix A

Solar Array details



Appendix D

Site Location Plan



Appendix B

Hitachi Heat Pump details

Nu-Heat
UNDERFLOOR & RENEWABLES

TECHNICAL INFORMATION: HITACHI TWIN FAN YUTAKI-M

AIR SOURCE HEAT PUMP

The Yutaki-M unit is made from quality materials and manufactured to the highest British and European standards.

As an air source heat pump, the Yutaki-M transforms a natural resource into cost-effective heating energy able to supply different types of heating systems such as underfloor heating and radiators.

The unit incorporates the latest inverter compressor technology. This ensures that the compressor at the heart of the unit is modulated to give optimum performance and reduced energy consumption by producing only the exact amount of heat required at the time. By reducing on/off cycling the life of the internal compressor is extended.

The twin-fan Yutaki-M has a 12kW output and is available with either a single or three-phase electricity supply.

Warranty – 5 years*

* 60 months (5 years) from the date of invoice. In order to validate the Hitachi warranty the heat pump must receive an annual service by an approved service partner.

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TECHNICAL DATA

Hitachi Yutaki-M	HPAHY/6(12)	HPAHY/6(12)3
Electricity supply	Single phase 230v	Three phase 415v
CoP at A7/35*	4.31	4.31
Power output (A-S/W45)	12kW	12kW
Starting current (approx)	1A	1A/phase
Operating current (approx)	29A	15A/phase
Height	1480mm	
Width	1250mm	
Depth	644mm	
Net weight	139kg	144kg

* In accordance with EN 14511 for heat source entry at 7 °C / hot water flow at 35 °C.

11.10.07.13

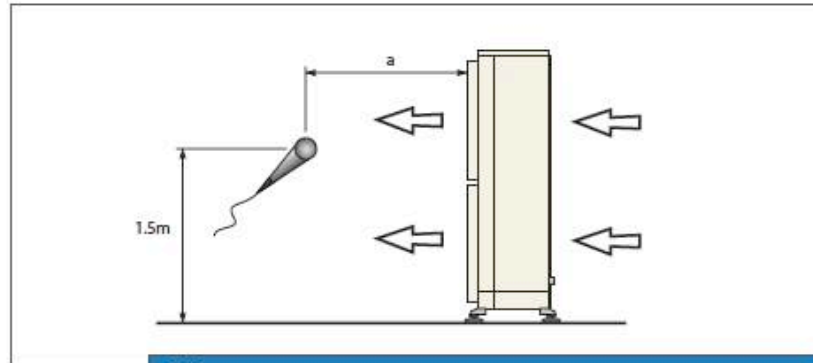
IEATH PARK HOUSE, DEVONSHIRE ROAD, HONITON, DEVON EX34 1SD TEL: 01404 549770 FAX: 01404 549771

WWW.NU-HEAT.CO.UK

TECHNICAL INFORMATION:
HITACHI TWIN FAN YUTAKI-M – AIR SOURCE HEAT PUMP

HITACHI YUTAKI SOUND PRESSURE LEVELS

Sound pressure levels are given at two distances, and for a range of frequencies for each unit.



A~1M									
	Sound pressure level (dB)								Global (dB(A))
	Frequency band (Hz)								
	63	125	250	500	1000	2000	4000	8000	
Yutaki 12 (17.5kW)	58.5	51.5	50.5	49.5	47	45	36	38	52

A~10M									
	Sound pressure level (dB)								Global (dB(A))
	Frequency band (Hz)								
	63	125	250	500	1000	2000	4000	8000	
Yutaki 12 (17.5kW)	46.5	39.5	38.5	37.5	33	33	24	26	40

Notes: 1. dB(A) = Weighting 'A' of acoustic power (scale A in accordance with IEC).
2. If the noise is measured under actual conditions of the installation, the values measured will be higher because of background noise and reflected sound.

Appendix C

Aerobic Food Waste Digester

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Domestic/Light Commercial Digester



Description

This lightweight domestic or light commercial unit is ideal for the eco conscious family or small commercial enterprise who want to reduce their food waste footprint and take responsibility for processing their own food waste. This unit is small enough to be almost invisible in a utility room, outhouse or industrial kitchen. No longer will you need to save up your food waste for weekly domestic collections, your food waste will be converted into garden compost within 24 hours.

For More Information

Contact Ecoecosse on:

T: 01369 701155 Mobile 0771 932 1649

E: jim.maclean@ecoecosse.com

Features

- Capacity: 2kg in 24hours
- Type of food waste:
- Fruits, Vegetables, Rice, Noodles, Meat, Seafood, Fish bone or soft bones, Eggs Shell.
- Cannot Process:
- Big Bones, Hard Shells, Cloths, Metal, Paper, Glass, Rubber, Cooking Oil, Plastic Bags
- (anything that the human stomach cannot digest)
- Customer Benefits :
- Processed food waste can be used as fertilizer, mixing it to ratio 1:10
- Reduction of waste to 15% of original eg 2kg reduced to 300g

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