SUSTAINABILTY STATEMENT
SEPTEMBER 2017



John Dickie Associates
Chartered Building Engineers
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Proposed Live-Work development on land adjacent to Homeland,
Eaugate Road,
Whaplode Drove,
PE12 0SP

Client : Mr S. Jeffs **Date August 2017** **Project No JDA/2013/195 Rev A**

1.0 Introduction

1.1 The Eugate Road project is being designed so that the property is 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

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 Stewart Jeffs) is a specialist breeder/trainer of gun dogs and also offers training for dogs and their owners. Additionally, Mr Jeffs works actively in the following 'rural pursuits' ;

- Mr Jeffs is a qualified Deer Stalker and is further qualified in Deer Management
- He is a Member of the British Association of Shooting and Conservation
- Mr Jeffs is listed on the active BASIS register - the professional register of Practitioners Providing professional Pesticide and Plant Nutritional Advice in Amenity, Forestry, Agriculture and commercial Horticulture.

He is wishing to develop a sustainable and low carbon 'Live-Work' property on land alongside Homeland, Eugate Road, Whaplode Drove in order to further develop the rural pursuits business from a 'low carbon' platform and a purpose built premises.
The breeding of gundogs and the associated training of such dogs (and their owners) requires the owner/operator of said enterprise to be 'on-site' at all times - not just for typical operational requirements, but also for security - purposely bred and trained gun dogs are extremely valuable. The use of gun dogs is very much a rural activity/pursuit and it is important therefore that the business is located with immediate access to the countryside. Whilst the specialised training of gun dogs and other activities is such that levels of unsociable barking is unlikely to cause nusiance, it is clearly sensible to locate such enterprises outside of intensely built up residential areas.

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 waste into a 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.

2.2 A Home User Guide will be provided to enable the promotion of energy efficiency within the community of the new development and provide further resources to enable long term carbon and energy reduction by improved education on the use of the proposed Low Carbon Technologies and Local Renewable Energy Sources. They will enable the home user to understand and operate their property efficiently and make the best of what the local area has to offer.

3.0 Water Conservation & Management

3.1 The site is not within a flood plain.
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 properties 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

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 home 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.

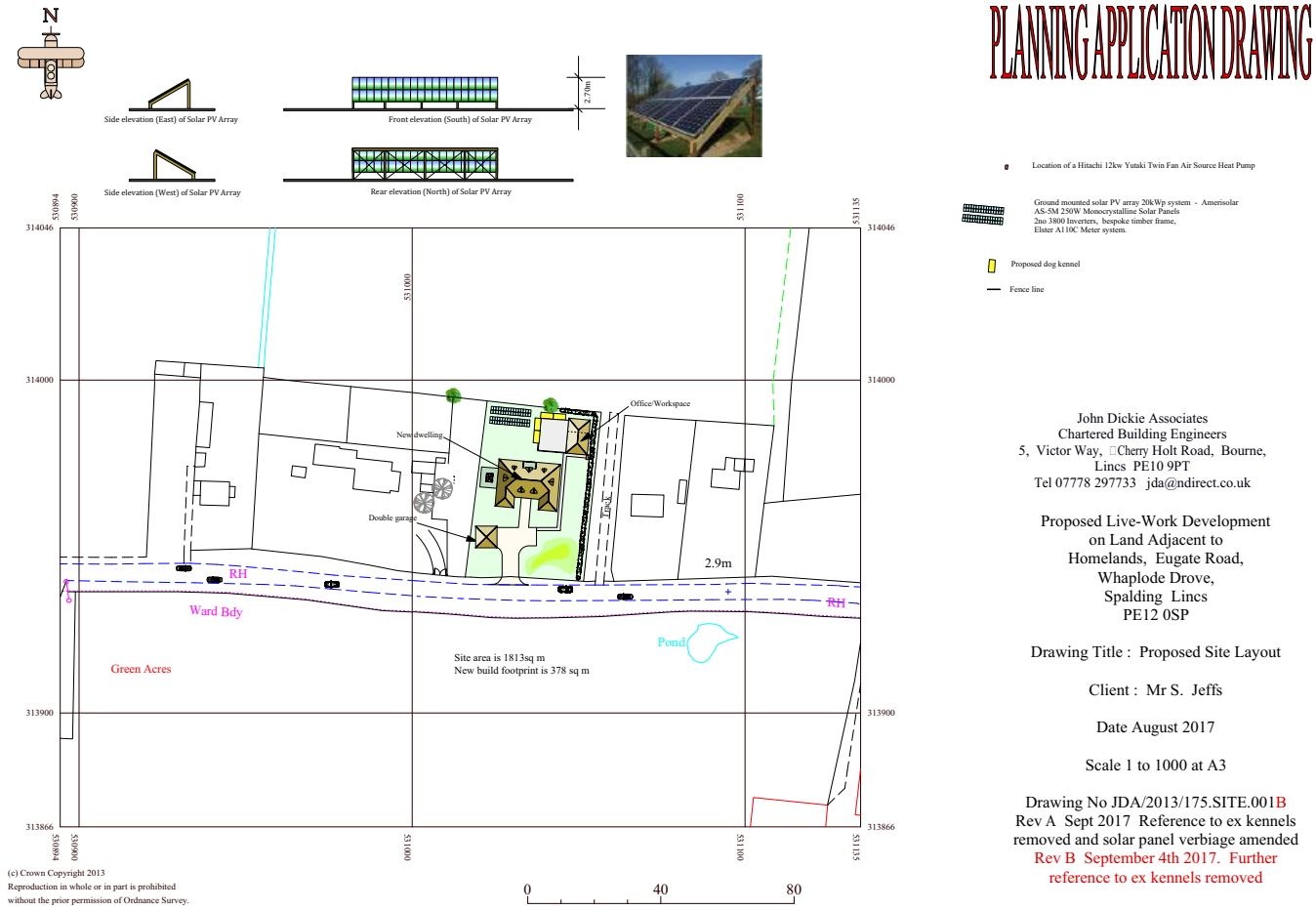
8.3 In addition to this the home and workspace will be have an Energy Performance Certificate (EPC) to demonstrate their effectiveness in this regard.

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

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 By providing a combination of approaches it will enable the developer to select the most desired options to suit specific requirements so that the new home and workspace can be designed and built 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.

John Dickie C. Build E MCABE

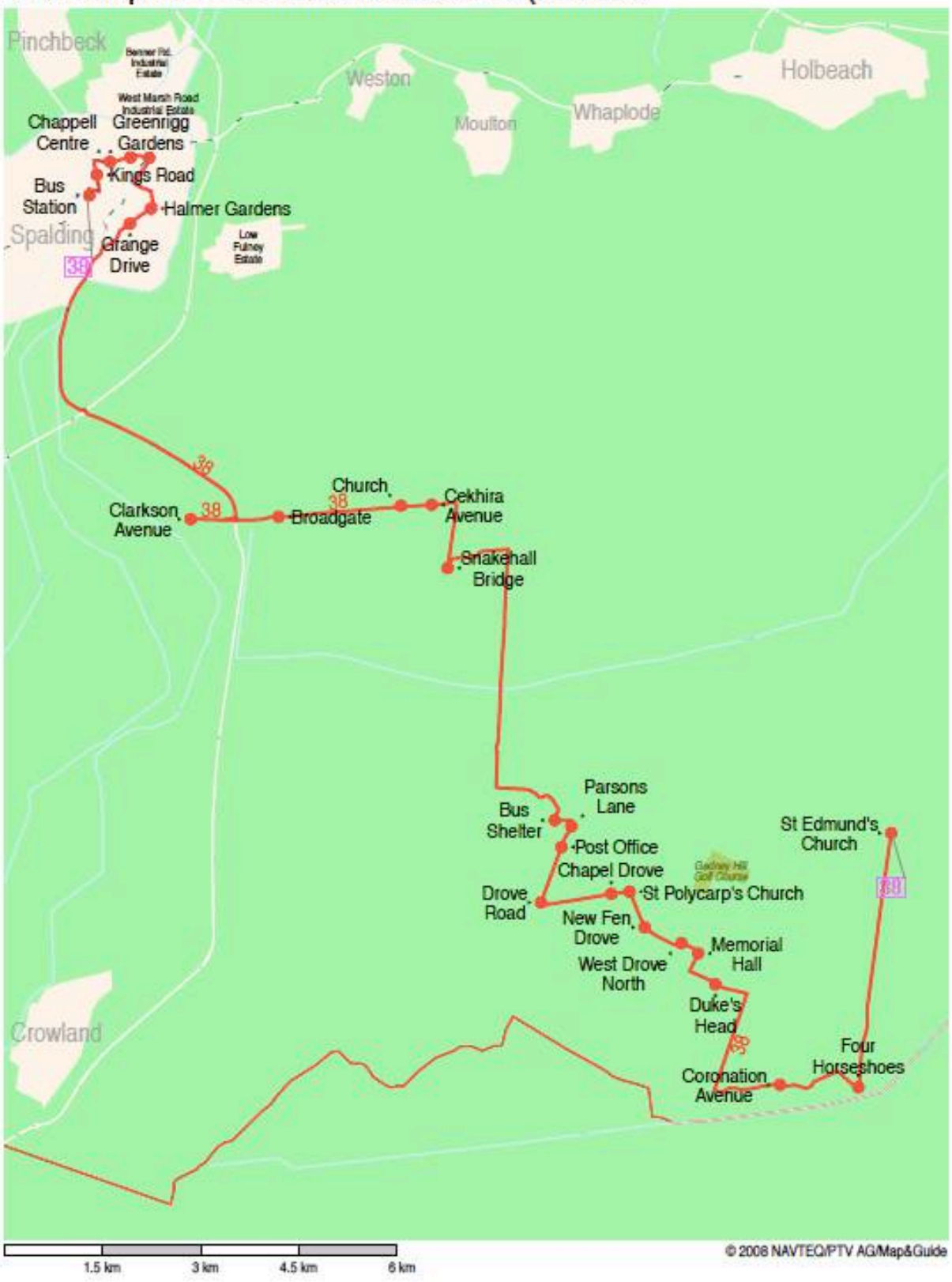
September 2017

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Appendix B
Bus Service Details

traveline
public transport info
0871 200 22 33

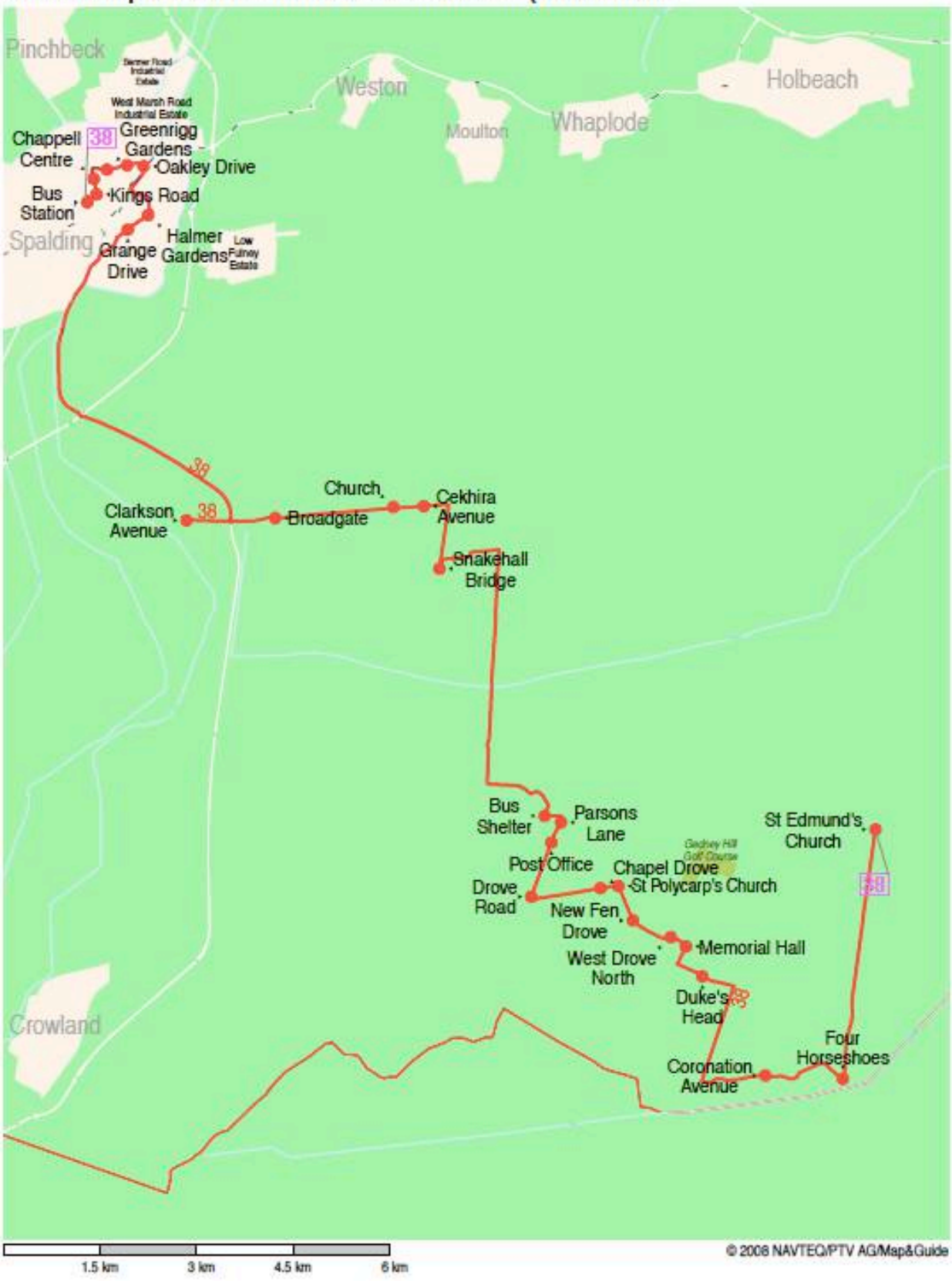
Route map for Fowlers Travel service 38 (inbound)



SUSTAINABILTY STATEMENT

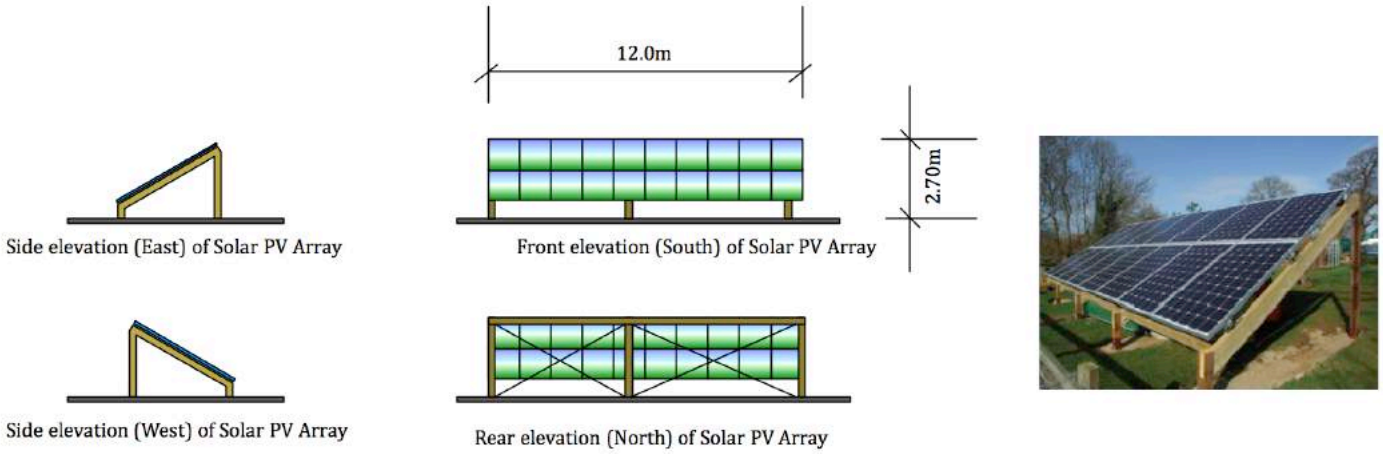
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Route map for Fowlers Travel service 38 (outbound)

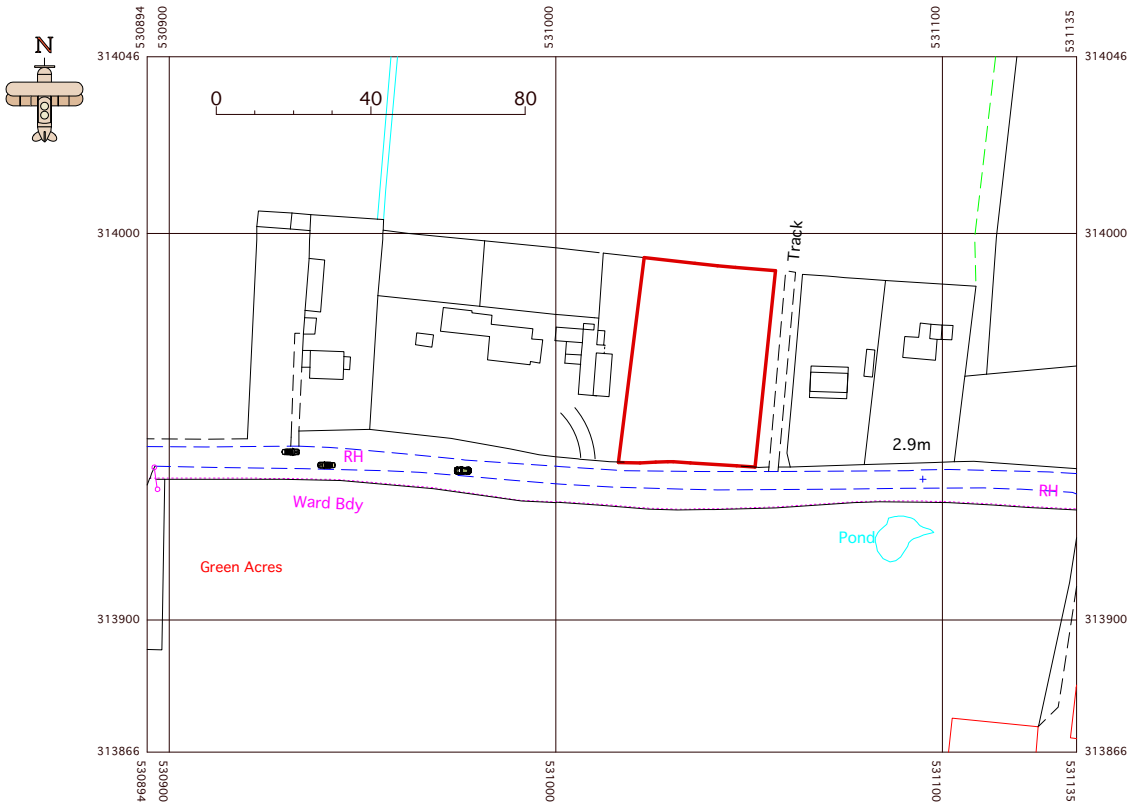


SUSTAINABILTY STATEMENT

Appendix C
Solar Array details



Appendix D
Site Location Plan



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SCALE 1 TO 1250 AT A4 LANDSCAPE

Appendix E
Hitachi Heat Pump details

TECHNICAL INFORMATION:
HITACHI TWIN FAN YUTAKI-M

Nu-Heat
UNDERFLOOR & RENEWABLES

AIR SOURCE HEAT PUMP



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

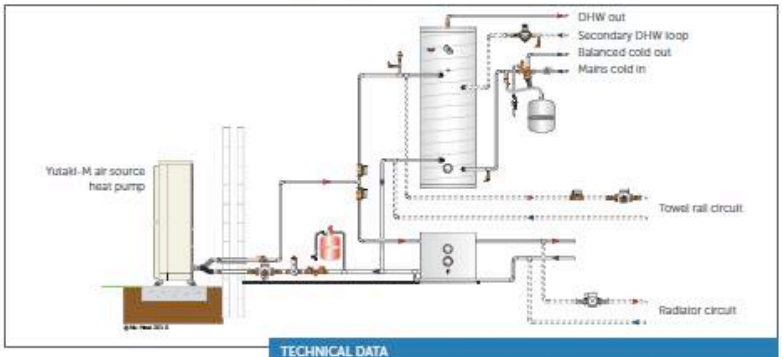
As an air source heat pump, the Yutaki-M transforms a natural resource into cost-effective heating energy able to supply different types of heating systems such as underfloor heating and radiators.

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

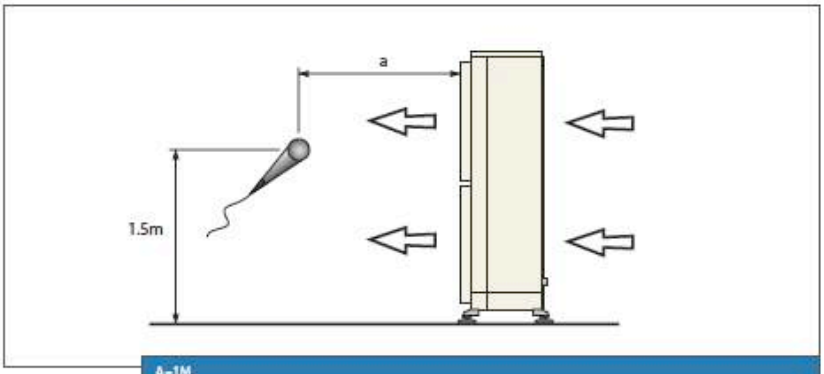
Hitachi Yutaki-M	HPAHY/6(12)	HPAHY/6(12)3
Electricity supply	Single phase 230v	Three phase 415v
CoP at A7/35*	4.31	4.31
Power output (A-3/W45)	12kW	12kW
Starting current (approx)	1A	1A/phase
Operating current (approx)	29A	15A/phase
Height	1480mm	
Width	1250mm	
Depth	444mm	
Net weight	139kg	144kg

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

'11.10.07.13
HEATHPARK HOUSE, DEVONSHIRE ROAD, HONITON, DEVON EX14 1SD TEL: 01404 549770 FAX: 01404 549771 WWW.NU-HEAT.CO.UK

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)								
	Frequency band (Hz)								Global (dB(A))
	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)								
	Frequency band (Hz)								Global (dB(A))
	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 F
Aerobic Food Waste Digester

ecoecosse

THE economical SOLUTION

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Domestic/Light Commercial Digesteur



For More Information
Contact Ecoecosse on:

T: 01369 701155 Mobile 0771 932 1649
E: jim.maclean@ecoecosse.com

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 foof waste will be converted into garden compost within 24 hours.

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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