

wardell-armstrong.com

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



ENGINEERING SUPPORT PARTNERSHIP LTD

**New building to house biomass boiler,
Cedar Falls Care Home, Spalding**

Design and Access Statement

June 2018

your earth our world



DATE ISSUED: June 2018
JOB NUMBER: NT13503
REPORT NUMBER: 0059.001

ENGINEERING SUPPORT PARTNERSHIP LTD

**New building to house biomass boiler,
Cedar Falls Care Home, Spalding**

Design and Access Statement

June 2018

PREPARED BY:

Ben Parkins Senior Planner



APPROVED BY:

Helen Kennedy Technical Director



This report has been prepared by Wardell Armstrong LLP with all reasonable skill, care and diligence, within the terms of the Contract with the Client. The report is confidential to the Client and Wardell Armstrong LLP accepts no responsibility of whatever nature to third parties to whom this report may be made known.

No part of this document may be reproduced without the prior written approval of Wardell Armstrong LLP.



Wardell Armstrong is the trading name of Wardell Armstrong LLP, Registered in England No. OC307138.

Registered office: Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom

UK Offices: Stoke-on-Trent, Birmingham, Cardiff, Carlisle, Croydon, Edinburgh, Glasgow, Greater Manchester, Central Manchester London, Newcastle upon Tyne, Sheffield, Taunton, Truro. International Offices: Almaty, Moscow

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

CONTENTS

1	INTRODUCTION.....	1
1.2	Biomass technology	1
2	NEED FOR THE DEVELOPMENT	1
3	DEVELOPMENT DESCRIPTION	2
3.2	Biopod's location	2
3.3	Fuel type.....	2
4	OTHER MATERIAL CONSIDERATIONS.....	3
4.1	Access and safety	3
4.2	Air quality.....	3
4.3	Flood Risk	3
4.4	Highways	3
4.5	Odour	4
4.6	Waste	4
5	RENEWABLE ENERGY POLICY	4
5.2	Renewables Directive	4
5.3	UK Renewable Energy Roadmap	4
5.4	UK Bioenergy Strategy 2012	4
5.5	National Planning Policy Framework	5
5.6	Local Planning Policy.....	6
5.7	Conclusion.....	6

APPENDICES

Appendix 1 – Boiler Brochure

Appendix 2 – Exempt Appliances

Appendix 3 – Ofgem Emissions Certificate

Appendix 4 – Site Specific Emissions Calculations

DRAWINGS

NT13503/059/01	Cedar Falls – Location Plan
NT13503/059/02	Cedar Falls – Existing Site Plan
NT13503/059/03	Cedar Falls – Proposed Site Plan
NT13503/059/04	Cedar Falls – Existing Elevations
NT13503/059/05	Cedar Falls – Proposed Elevations
NT13503/059/06	Cedar Falls – Floor and Roof Plan

1 INTRODUCTION

1.1.1 Wardell Armstrong LLP has been appointed to prepare and submit a retrospective planning application to erect a 'biopod' to house a biomass boiler system within the curtilage of Cedar Falls Care Home - Little London Road, Spalding, PE11 2UA (please see Location Plan submitted with this application). The biopod acts as an energy centre, generating heat and hot water for the Care Home from a sustainable and renewable source.

1.2 Biomass technology

1.2.1 The UK Bioenergy Strategy 2012 defines biomass as *"... material of recent biological origin, derived from plant or animal matter such as wood, agricultural crops or wastes, and the biological component of municipal wastes"*. Biomass technology uses the energy contained within this organic matter, in this instance wood pellets, to produce heat. The CO₂ released into the atmosphere is the same CO₂ that the vegetation absorbed in the first place and which will then be recaptured by further vegetation growth. Accordingly, biomass technology is arguably a carbon-neutral alternative to gas, and when biomass is sought from a sustainable source, it is also considered to be a renewable source of energy by both the United Nations and the European Union.

2 NEED FOR THE DEVELOPMENT

2.1.1 The need for this energy centre is two-fold: substantially lowering the Care Home's carbon footprint and reducing operational costs in the long run. As is common with care homes, Cedar Falls Care Home has high energy requirements to help provide a high standard of living to its residents. Until recently, however, the Care Home was reliant on the national energy grid, which is powered to a significant extent by non-renewable gas. By using biomass technology instead, the Care Home is able to significantly reduce its carbon footprint to the benefit of the environment.

2.1.2 This development will also assist the Care Home operator to reduce operating costs and will help it to better forecast future operating costs. This is partly due to the fact that the UK's energy grid is highly dependent on foreign fuel imports and is susceptible to fluctuations in wholesale energy prices. Even when wholesale energy prices dip, these savings are seldom passed onto to the consumer market by the energy suppliers. Furthermore, market prices have seen significant increases in price with this trend likely to continue over time. By contrast, biomass fuels are less exposed to the energy market's cost fluctuations and enjoy greater price stability.

3 DEVELOPMENT DESCRIPTION

3.1.1 The biopod has the following characteristics:

- Dimensions: 12.2m (l) x 2.44m (d) x 2.8m (h)
- Material: timber clad steel structure.
- Colour: cedar brown.
- Access doors: steel structure and fully lockable.
- Biomass boiler: ETA PE-K 220kW (please see brochure and emissions calculations submitted with this application).
- Internal store room, separated from boiler room by a steel fire wall.
- Additional safety features included: Carbon monoxide and smoke detectors, and fire extinguisher.

3.1.2 Flue details:

- Number of flues: 1.
- Material: 316 Stainless Steel Inner and 304 stainless steel outer.
- Colour: Black.
- Height from ground: 7.9m.
- Diameter: 300mm.

3.1.3 For further design information, please see the Proposed Elevations being submitted with this application.

3.2 Biopod's location

3.2.1 The proposed energy centre is considered to be in the best possible location – in close proximity to the Care Home, not conflicting with site operations and where it is easily accessible by delivery vehicles without affecting highway safety.

3.3 Fuel type

3.3.1 The biomass boiler uses ENPlus A1 Pellets, quality certified to guarantee that the fuel is manufactured to the highest specifications. No other fuel is used as this may not be in compliance with existing regulations or could damage the entire feeding and burning system. Very little ash is produced as biomass boilers are designed to create the correct conditions for complete combustion to take place.

4 OTHER MATERIAL CONSIDERATIONS

4.1 Access and safety

- 4.1.1 The door is padlocked to prevent any access by unauthorised persons. Access should only ever be required into the fuel store for maintenance which is undertaken by fully trained personnel only.
- 4.1.2 The biomass boiler will have various safety mechanisms, not least to prevent burn back. The boiler conforms to BS EN 303-5:1999.
- 4.1.3 In regard to access into the site by delivery vehicles, it is proposed the existing site access is used. The delivery vehicle will station itself on the hardstanding and pump the wood pellets up, via hose, into the pellet store. This operation only takes approximately 30 minutes.

4.2 Air quality

- 4.2.1 High specification biomass boilers, such as this one, achieve complete combustion thanks to a combination of, amongst other things, precise oxygen intake and very high burning temperatures. This ensures that very little smoke is emitted and the emission of any pollutants is significantly minimised, to the extent that it can legally be used within Smoke Control Zones as exempt by the Clean Air Act. The very low moisture quantity of the pellets also significantly reduces water vapour emissions that can be confused for what may look like smoke.
- 4.2.2 The high-end specification of the boilers, together with periodic maintenance, will ensure that emissions of CO₂, NO₂, PM and SO₂ are kept to a minimum and below what would be emitted by either oil or coal fired boilers. Constant monitoring will take place to promptly rectify any problems in the unlikely event of an issue occurring.

4.3 Flood Risk

- 4.3.1 The site is in Flood Risk Zone 3, so a Flood Risk Assessment is being submitted with this planning application.

4.4 Highways

- 4.4.1 Delivery of the pellets will only take place periodically, with maintenance site visits taking place either once or twice a year, resulting in no significant effect on the highway network. Each delivery is likely to take approximately 30 minutes.

4.5 Odour

- 4.5.1 There are no unpleasant odours associated with biomass technology and in any case, would almost be imperceptible.

4.6 Waste

- 4.6.1 Very little ash is produced as biomass boilers are designed to create the correct conditions for complete combustion to take place.

5 RENEWABLE ENERGY POLICY

- 5.1.1 Policy relating to renewable energy and climate change that affects the proposed development is present at international, national and local levels.

5.2 Renewables Directive

- 5.2.1 The Renewables Directive is a European Union directive which mandates levels of renewable energy use within the European Union. The directive was published in 2009 and requires 20% of energy consumed within the European Union to come from renewable sources by 2020. This target is pooled among the Member States with the UK being set a target of 15%.
- 5.2.2 Member States were obliged to notify the European Commission by 2010 of a National Renewable Energy Action Plan, which sets out the road map of their trajectory. Member States must submit periodic Progress Reports explaining their implementation of the Directive and their progress towards their targets. The UK has complied with this policy through its Renewable Energy Roadmap as set out below.

5.3 UK Renewable Energy Roadmap

- 5.3.1 The UK Renewable Energy Roadmap, published in 2011, and updated in 2012 and 2013, sets out how the UK will reach its goal of generating 15% of energy consumed from renewable sources by 2020. It presents a framework and set of actions for the delivery of renewable energy deployment. The first update of the Roadmap reports on progress up to the end of 2012 and the second update provides analysis on further achievements and changes that have taken place in 2013.
- 5.3.2 The development generates renewable energy and as such is in accordance with the relevant energy and renewable energy policies (set out above).

5.4 UK Bioenergy Strategy 2012

- 5.4.1 The UK Bioenergy Strategy sets out the UK's approach to achieving sustainable, low-

carbon bioenergy deployment by defining a framework of principles that will govern future policies. The strategy sets out a systematic approach to the more challenging issues connected with bioenergy: it describes a framework of principles for future policy development and sets out a broad hierarchy of uses in energy while considering non-energy sectors, but does not set policies and delivery measures and does not dictate how biomass must be used.

5.5 National Planning Policy Framework

5.5.1 The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. The NPPF states that developments should "contribute to protecting and enhancing the natural, built and historic environment; and, as part of this, help to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy".

5.5.2 Paragraph 97 states that "local planning authorities should recognise the responsibility on all communities to contribute to energy generation from renewable or low carbon sources". The policy also states that local planning authorities should:

- "have a positive strategy to promote energy from renewable and low carbon sources;
- design their policies to maximise renewable and low carbon energy development while ensuring that adverse impacts are addressed satisfactorily, including cumulative landscape and visual impacts;
- consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure the development of such sources;
- support community-led initiatives for renewable and low carbon energy, including developments outside such areas being taken forward through neighbourhood planning; and
- identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers."

5.5.3 The development is for the purposes of delivering renewable energy at the site and to reduce green-house gas emissions through the combustion of sustainably sourced

wood pellets to generate heat and will thus be in accordance with the policies set out in the NPPE.

5.6 Local Planning Policy

5.6.1 More locally, Policy SG17 'Protection of Residential Amenity' of the South Holland Local Plan (2006) saved policies state that *"planning permission will be granted for development which would not cause material harm to residential amenity.*

In considering proposals the following criteria will be taken into account:-

- 1) the extent of any overlooking or loss of privacy;*
- 2) the extent of any overbearing or overshadowing effect;*
- 3) potential noise nuisance including that associated with vehicular activity;*
- 4) the levels of smell, emissions and pollutants".*

5.6.2 The biopod is timber clad to ensure it is aesthetically pleasing and has been located along the side of the building so as to protect local amenity. As previously shown in this document, it is not considered that the biopod would result in any harm to the local highway, and neither will it lead to dust, noise or odour nuisance. The biopod neither results in overbearing or overshadowing. It is considered therefore that the biopod conforms to the South Holland Local Plan (2006) saved policies.

5.7 Conclusion

5.7.1 The biopod houses one ETA PE-K 220kW biomass boiler and serves to provide Cedar Falls Care Home with renewable energy. This is line with the UK's target to reduce CO₂ emissions as required by the EU's Renewables Directive and the UK's Renewable Energy Roadmap. The biopod's location within the site has been carefully selected to allow for deliveries while not impacting on the functioning of the site or on local amenity. This high specification boiler is exempt from the Clean Air Act, with lower emissions compared to a conventional boiler.

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)178 227 6700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

CARDIFF
22 Windsor Place
Cardiff
CF10 3BY
Tel: +44 (0)292 072 9191

CUMBRIA
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)122 856 4820

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LONDON
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

MANCHESTER (City Centre)
76 King Street
Manchester
M2 4NH
Tel: +44 (0)161 817 5038

MANCHESTER (Greater)
2 The Avenue
Leigh
Greater Manchester
WN7 1ES
Tel: +44 (0)194 226 0101

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle Upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

SHEFFIELD
Unit 5
Newton Business Centre
Newton Chambers Road
Thornccliffe Park
Chapelton
Sheffield
S35 2PH
Tel: +44 (0)114 245 6244

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:
ALMATY
29/6 Satpaev Avenue
Regency Hotel Office Tower
Almaty Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW
21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67