

Carbon and energy Statement

Owlerbarrow House, Bury

on behalf of :

Mrs Bennet

June 2026

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1. Introduction

1.1 This Carbon and Energy Statement has been produced to support an application for planning permission for a new home (“the Application Proposals”) for Mrs Bennet (“the Applicant”) for the site known as Owlerbarrow house, Bury.

1.2 This Statement has been prepared by Zach Thorp of Thorp Design Services.

2. Carbon And Energy Statement

2.1 In this section we will review some of the strategies available.

2.2 Ground Source Heat Pumps

Ground source heating takes advantage of the stable ground temperature of 12°C to heat either air or water to provide energy efficient heating (and optional comfort cooling) to a building.

The system involves the installation of underground pipework laid in a horizontal or vertical pattern in land adjacent to the dwelling, usually underneath the garden or driveway.

The size of the adjacent parking area to the dwelling means that a ground source heat pump system is technically feasible on this site, however, the installation costs are very high therefore we would not recommend ground source heat pumps for this development.

2.3 Air Source Heat Pumps

Air source heat pumps work in the same manner as ground source heat pumps, but instead of extracting low temperature heat from the ground, they extract it from the air. They can do this even when the outside temperature is -15°C.

The proposed dwelling has a suitable outside area for the external unit to be located. This could be at the side of the dwelling thereby mitigating the noise impact to the dwelling occupants and

surrounding neighbours. Whilst the installation costs of these systems are not as high as with ground source heat pumps, they are still significant. It should also be noted that efficient running of the system can only be achieved with careful management of the controls by the house holder. There are many cases of heat pumps actually increasing energy use and costs when compared to traditional solutions.

2.4 Efficient Heating System

The heating system is usually the main generator of CO₂ emissions of a dwelling. Traditional mains gas boilers produce significantly lower emissions when compared to electric, oil and LPG systems.

The addition of flue gas heat recovery systems and improved heating controls are proven to bring effective reductions in emissions. They also have the advantage that most house holders would not consider this an unfamiliar technology when compared to other renewable options.

The costs of these options are not significant therefore this option is suitable for this development.

2.5 Enhanced Construction Methods and Materials

As part of the build new insulation can be laid in the roof and all new walls are to have insulation included within the installation.

The use of enhanced insulating materials, high specification glazing, composite insulated doors and improved air tightness can significantly reduce the energy demand of the dwellings. Indeed the current Building Regulations Approved Document L1A has introduced a target fabric energy efficiency that must be achieved in addition to the target emissions rate.

Using this method alone will have significant cost implications. However the use of improved construction in combination with other options will achieve the required emissions reductions and therefore is suitable for this development.

2.6 Proposed Strategy

It is proposed that the dwelling will incorporate enhanced construction and enhanced efficiency heating systems to reduce CO2 emissions.

The dwelling will adopt a 'fabric first' approach to energy efficiency following the principle that the demand for energy should first be minimised before addressing how the energy is produced. The building fabrics will be highly insulated and the target air tightness is high performing yet achievable when using high quality workmanship. This will mean that energy efficiency will be embedded within the dwelling throughout its lifetime rather than placing over reliance upon renewable technologies with a restricted working life.