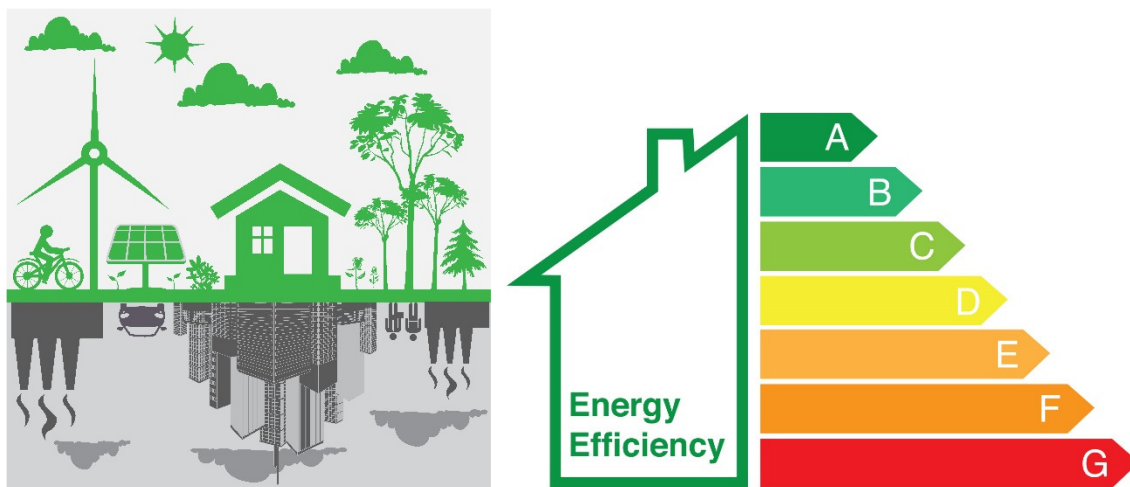


ENERGY STATEMENT



54 Ringley Road, Whitefield, Bury

Building Footprint: 298 m2

Proposal: 'Demolition of existing dwelling and erection of replacement dwelling'.

OW & ZERO CARBON TECHNOLOGIES:

On-Site CHP

For the reason outlined below, it has been concluded that on-site CHP would not be a suitable heat source for a development of this size.

- **Efficiency:** Due to the size of the development, the development is not of a suitable size to benefit from CHP.
- **Cost of installation –** The base of installation of CHP is significant and would be a prohibitive cost to progress of a development of this size.

Therefore, it is concluded that CHP is not suitable for this development.

Biomass Boiler

Biomass boilers generate heat on a renewable basis as they are run on biomass fuel which is carbon neutral. A biomass boiler would require a central plant room and heat distribution network and would therefore be liable to high capital and running costs.

Whilst technically feasible, a biomass boiler is not appropriate for this development for the due to its small nature.

Ground and Air Source Heat Pumps (GSHPs and ASHPs):

Heat Pumps upgrade energy from the ground or air and utilise it for space heating, hot water and cooling. They are able to provide substantial reductions in energy.

However, GSHPs require costly ground excavation works to bury the coils – boreholes would be required for the proposed development due to the high space requirements of ground coils and this is not possible on this site.

Air Source Heat Pumps (ASHPs) are a more economical alternative to GSHPs as they do not require ground works. However, the performance of ASHPs can be lower than for GSHPs are therefore the reductions in CO₂ are correspondingly low.

ASHP are considered appropriate in a combined system for the property.

Micro Wind Turbines

Small rooftop wind turbines are designed to generate electricity from the wind for use within each dwelling. Urban rooftop wind turbines do not generally perform sufficiently well to warrant their installation, due to the low and turbulent wind conditions present. They are therefore likely to remain technically unfeasible.

It has therefore been concluded that wind turbines are not a suitable technology for the proposed development.

Photovoltaic Panels - Proposed Technology

Photovoltaic Panel have been identified as a feasible technology for incorporation into the residential development, due to the technical and economical case for this technology plus this technology will deliver the most significant CO₂ reductions.

In order to achieve the balance of the CO₂ reductions, it has been estimated that a min 4.9kwp System would have to be fitted to the roof of the building.

Building Regulations

Building fabric thermal transmittance is measured by the U-value of each building element in watts/m²/K. the U-value is essentially a measure of the rate at which energy is lost through a building element; the greater the U-value, the higher the rate of loss.

The table below shows the fabric performance levels assumed in relation to the minimum requirements of the Building Regulations for the development.

Building Element/ Characteristic	Building Regulations Part L Requirements
Exterior Walls	U value 0.18 W/m ² K
Floors	U value 0.13 W/m ² K
Roof	U value 0.11 W/m ² K
Door	U value 1.2 W/m ² K
Window	U Value 1.2 W/m ² K

Targets

The development seeks to reduce its carbon in line with Policy JP S2 with its use of ASHP, photovoltaic panels and highly efficient energy fittings where appropriate. The energy, heating and cooling technology will all be capable of being adapted to zero fossil fuels at a later date where not initially installed.

Energy and design consideration

The dwelling will be built to the minimum Part L of the Building Regulations June 2022

The design and specification details proposed will at the very least meet those required

by the Building Regulations Part L of the Building Regulations June 2022. As we have not reached building regulations stage, we cannot confirm what level of insulation will be included.

Technology	Technical Feasibility	Carbon Savings	Estimated Costs	Financial Viability (insert proportion of estimated project costs)
Solar photovoltaic	The flat roof will be capable of accommodating PV panels	20%	£11k	To be incorporated into scheme. Project cost TBC.
Wind Power	Predicted wind speed not considered sufficient. Visual impact of wind generation would also impact on Green Belt location.	Not sufficient wind speed according to web resources	N/A	N/A
Micro Hydro	There is no capacity for micro hydro on site since there are no local water courses available	N/A	N/A	NA
District Heating	It is understood that there are no existing or planned district heating networks to facilitate connect that this stage	N/A		
Solar Hot Water	The roof could accommodate panels although the preference is for Solar PV taking account of limited roof space available.	10%	£6000 per unit	N/A
Ground Source Heat Pumps	Not applicable N/A not sufficient land	N/A	N/A	NA

Air Source Heat Pumps	To be installed	10%	£5000	To be incorporated into scheme. Project cost TBC.
Biomass	At present no storage building is included. Redesign would need to be undertaken to include a storage building or extension to accommodate a biomass system. There is not sufficient room to allow.	N/A		

Predicted Energy Assessment

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property.

This will include more detailed information about the energy performance of the completed property.

The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be. The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO₂) emissions. The higher the rating the less impact it has on the environment.

