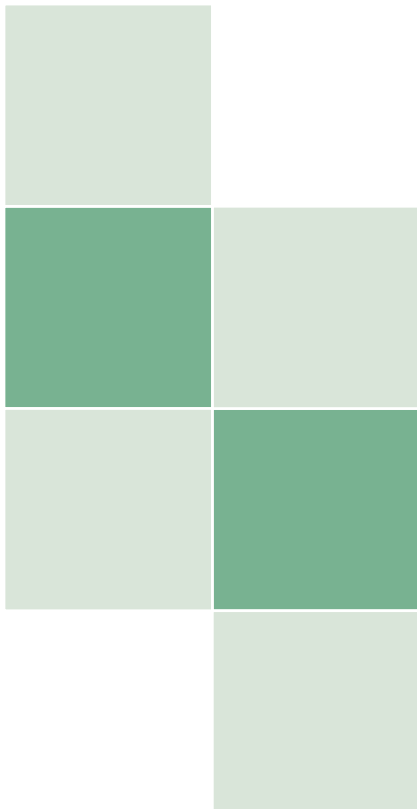




**Unit B
Birch Business Park
Whittle Lane, Heywood**

Energy Statement



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1.0 Executive Summary

This Energy Statement has been prepared as part of a planning application for a proposed new warehouse at Birch Business Park, Whittle Lane, Heywood. This energy statement shall demonstrate that the proposed development meets the requirements as per UK Building Regulations and Rochdale Adopted Core Strategy (Adopted October 2016):

- compliance with Part L2A of the English Building Regulations 2013;
- measures taken to satisfy Policy G2 – Energy and new development

The results of the Part L2A 2013 assessment to show compliance with Criterion 1 of Building Regulations Part L2A 2013 are below, and shows a 31.9% improvement over that target:

	Target CO2 emission rate (kgCO2/m ² .annum)	Building CO2 emission rate (kgCO2/m ² .annum)	Part L2A 2013 Betterment %
Unit B, Birch Business Park	13.5	9.2	31.9

Table 1: Part L2A 2013 assessment results

The fabric u-values and building services system efficiencies selected at this stage show compliance with the requirements of Criterion 2 of Part L2A 2013.

The current design shows compliance with Criterion 3 of Part L2A 2013, in that there are no areas of solar exceedance.

The proposed design utilises improved fabric parameters and high efficiency LED lighting throughout in conjunction with a Variable Refrigerant Flow (VRF) system, which utilises Air Source Heat Pump (ASHP) technology and high efficiency ventilation with heat recovery for the office area. As well as this other natural means of reducing CO2 include tree planting and waste facilities to encourage recycling and a reduction in waste.

2.0 Background

2.1 Introduction

The Proposed Development, located at Birch Business Park, off Whittle Lane, Heywood, involves building a new warehouse containing office facilities on the brownfield site, which will require demolition of the existing Unit B and Unit G. Therefore, the elements contained within the development are to be assessed using Approved Document Part L2A which is intended for new-build, commercial premises.

The calculations within this report are preliminary and includes high-level assumptions, thus will need to be recalculated at various stages throughout the design of the development to ensure that compliance with all criteria are still achieved.

2.2 Site Location

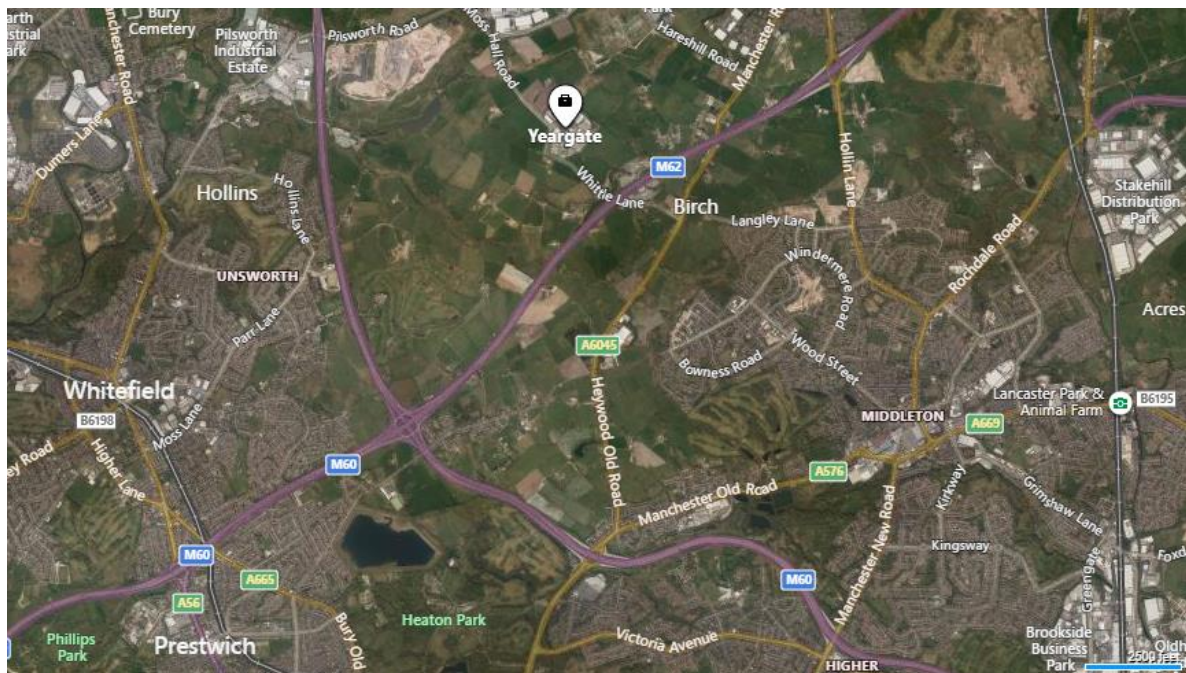


Figure 1: Site location

2.3 Modelling Disclaimer

The building has been modelled with accredited software package IESve Version 7.0.13, which is dynamic simulation software approved for the purpose of demonstrating compliance with the energy efficiency and carbon emission requirements of the building regulations.

It should be noted that the data generated by this work is obtained using computer simulations. These simulations are the best means of predicting the performance of the building at this stage. Full certainty can only be achieved by measuring the performance of the building and associated systems after a period of use.

Whilst the simulations have been undertaken in good faith using reasonable skill and care, Crookes Walker Consulting can take no responsibility for differences between the computer simulations and the actual performance of the completed building due to the inherent complexity and variability of the physics in a building and its environment.

3.0 Energy Targets

3.1 Building Regulations Part L2A 2013

The English Building Regulations Part L2A 2013 are made up of five criteria which all need to be achieved in order to attain overall compliance. The three which are the focus of this assessment are:

- Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target;
- Criterion 2: The performance of the building fabric and fixed building services should achieve reasonable overall standards and energy efficiency;
- Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains.

Criterion 1

Carbon dioxide emissions (kgCO₂/m²/year) are noted as the Emission Rating; the Building Emission Rating (BER) must be lower than or equal to the Target Emission Rating (TER).

The results of the Part L2A 2013 assessment to show compliance with Criterion 1 of Building Regulations Part L2A 2013 are below, and shows a 31.9% improvement over that target:

	Target CO2 emission rate (kgCO ₂ /m ² .annum)	Building CO2 emission rate (kgCO ₂ /m ² .annum)	Part L2A 2013 Betterment %
Unit B, Birch Business Park	13.5	9.2	31.9

Table 1: Part L2A 2013 assessment results

Criterion 2

Ensure that minimum standards are achieved throughout the design, in terms of fabric, systems and lighting. This is calculated on an individual element basis; thus, all elements must exceed those outlined in the Building Regulations and Non-Domestic Building Service Compliance Guide.

Criterion 3

The amount of solar gains allowed to enter the occupied spaces should not exceed those outlined in the notional building. This is to reduce the energy demand of heating and cooling systems within the development.

The Unit B, Birch Business Park design stage BRUKL demonstrates compliance with Criterion 1, Criterion 2 and Criterion 3 of the Building Regulations Part L2A 2013.

3.2 Rochdale Core Strategy

Further to achieving Part L compliance, the proposed development, must also adhere to Rochdale Adopted Core Strategy. The policy which this assessment will focus on is Policy G2; Energy and new development.

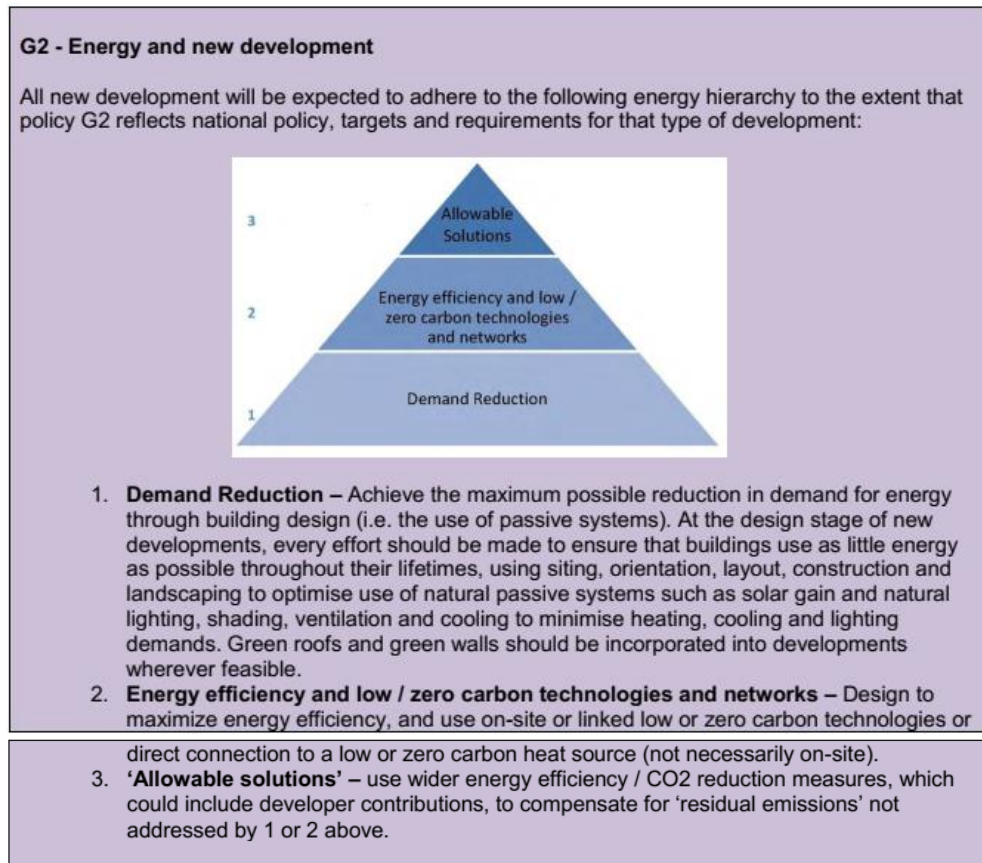


Figure 2: Rochdale Core Strategy G2

3.2.1 Demand Reduction

The first step is to reduce the building's energy demand through passive measures, such as improved fabric and being more air tight. Below is a table with the parameters used in comparison to the minimums required by Building Regulations:

Building Element	Minimum Building Regs Fabric (U-value, W/m²K)	Unit B Fabric (U-value, W/m²K)
<i>External Walls</i>	0.35	0.26
<i>Floor</i>	0.25	0.22
<i>Roof</i>	0.25	0.18
<i>Windows</i>	2.20	1.93
<i>Vehicle Access & Similar Large Doors</i>	1.50	1.50
<i>Air Permeability</i>	10 m ³ /hr/m ² @ 50 Pa	5 m ³ /hr/m ² @ 50 Pa

Table 2: Unit B's fabric improvements and air permeability in comparison to Building Regulations.

3.2.2 Energy efficiency and low/zero carbon technologies and networks

Step 2 is to utilise high efficiency and low/zero carbon building services for the development. The following has been utilised for the proposed new Unit B:

- High efficiency LED lighting with PIR control and daylight sensing
- High efficiency mechanical ventilation with heat recovery and low specific fan power
- Variable Refrigerant Flow (VRF) system, which utilises Air Source Heat Pump technology (low/zero carbon technology)

3.2.3 Allowable Solutions

The developer has appointed a landscaping consultant and additional tree planting will occur as part of this development. There is also a waste compound area highlighted as part of this scheme for the encouragement of waste reduction and recycling.

4.0 Summary

This Energy Statement was prepared as part of a planning application and to demonstrate that the proposed Unit B warehouse development located at Birch Business Park, Whittle Lane, Heywood, complies with UK Building Regulations Part L2A 2013 and Rochdale Core Strategy policies.

The proposed new Unit B complies with Criterion 1, Criterion 2 and Criterion 3 of the UK Building Regulations Part L2A 2013 at this design stage.

The measures used in the design of this development also meet the requirements of Rochdale Core Strategy G2 in that improvements over the building fabric and building services systems over and above the Building Regulations minimum standards means reduced energy demand, and the Variable Refrigerant Flow (VRF) system, which utilises Air Source Heat Pump (ASHP) technology is classed as a low/zero carbon technology. There are further contributions to reduce CO₂ through natural schemes including tree planting and waste facilities to encourage recycling and a reduction in waste.