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The Field, Birch Business Park

Rochdale

Energy Statement for Planning

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Revision Record

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Contents

1.0	Executive Summary	5
2.0	Introduction	7
2.1	Modelling Disclaimer	7
2.2	Thermal Model	8
3.0	Energy Strategy/Methodology	9
3.1	Energy Efficient Services.....	10
3.1.1	Mechanical Ventilation with Heat Recovery (MVHR)	10
3.1.2	Building Services Insulation.....	10
3.1.3	Motor Efficiency	10
3.1.4	Low and Zero Carbon Technologies.....	11
3.1.5	Efficient Lighting Installations	11
4.0	Model Inputs.....	12
4.1	NCM Building Types.....	12
4.2	Fabric Parameters	12
4.3	System Parameters	14
4.4	Domestic Hot Water	15
4.5	Lighting.....	15
5.0	Results.....	16
5.1	Rochdale Borough Council's sustainability objectives.....	16
5.2	Energy Performance Certificate	17

5.1	BREEAM UK	17
6.0	Appendix 1 – Draft EPC Unit A.....	18
7.0	Appendix 2 – Draft EPC Unit B	19

1.0 Executive Summary

This Energy Statement details how the proposed industrial development of The Field, Birch Business Park into two warehouse units aligns with Rochdale Borough Council's sustainability objectives, as set out in the Integrated Assessment Framework. The project has been designed with energy performance, low carbon technologies, and long-term operational resilience at its core.

The scheme incorporates a fabric-first design strategy, renewable energy generation, and non-fossil fuel heating systems to support Rochdale's climate change and air quality objectives:

- **Objective 6 – Support improved health and well-being of the population and reduce health inequalities:** The proposed warehouse avoids gas combustion or fossil-fuel-based heating systems. Instead, it uses clean, low-emission air-source heat pumps (ASHPs) and modern ventilation systems to promote better air quality for warehouse staff and surrounding communities.
- **Objective 10 – Improve Air Quality:** As a light industrial/logistics building, the design prioritises zero on-site combustion, reducing NO₂ and particulate emissions. This supports Rochdale's Air Quality Management Area (AQMA) goals, particularly by cutting pollutants from heating systems and enabling future electric vehicle (EV) integration. In addition to reducing direct emissions, the development includes the planting of native tree species around the site boundary. This contributes to improved local air quality, enhances biodiversity, and supports Rochdale's objectives on green infrastructure and climate resilience.
- **Objective 12 – Ensure communities, developments and infrastructure are resilient to the effects of climate change:** The warehouse will feature high-performance insulated cladding, airtight construction, and passive design measures to minimise energy demand and reduce overheating risk. This resilience supports long-term operational reliability under changing climate conditions.
- **Objective 15 – Increase energy efficiency, encourage low carbon generation and reduce greenhouse gas emissions:** The development includes roof-mounted solar PV panels and electric heating via ASHPs, delivering significant reductions in operational carbon emissions and helping Rochdale meet its net-zero 2038 target. This energy strategy also future-proofs the building for grid decarbonisation and potential battery storage.

- Objective 17 - Ensure that land resources are allocated and used in an efficient and sustainable manner: The building layout maximises the use of the available plot, and its low-carbon design endures the site remains fit for purpose over the long term. The development also supports economic activity in a strategic employment location while meeting sustainability expectations.
- Energy-efficient HVAC equipment, including Air Source Heat Pumps (ASHP), provides effective heating and cooling to mitigate overheating risks.
- EPC 'A' Rating.
- BREEAM Ene01 credits achieved are to be confirmed from the BREEAM UK framework.

Table 1 highlights the Building Emission Rate (kgCO₂/m²) and Primary Energy Use kWh/m²/year) for units A & B. This report will summarise each of the above criteria and demonstrate how the proposed development can achieve each target.

Unit	Target Emission Rate kgCO ₂ /m ² /year	Building Emission Rate kgCO ₂ /m ² /year	Target Primary Energy Rate kWh/m ² /year	Building Primary Energy Use kWh/m ² /year	% Emission Rate Improvement over Part L Volume 2 2021	Projected EPC Rating
A	1.10	1.05	11.68	11.22	4.5	A (12)
B	1.11	1.06	11.84	11.27	4.5	A (12)

Table 1. EPC Rating, NCM Energy & NCM Carbon Emissions for each Unit.

2.0 Introduction

This Energy Statement demonstrates how the proposed development of units A & B at The Field, Birch Business Park supports Rochdale Borough Council's sustainability goals, as outlined in the Integrated Assessment Framework. The project has been designed with energy performance, low carbon technologies, and long-term operational resilience at its core.

2.1 Modelling Disclaimer

The building has been modelled with accredited software package IESVE accredited software Version 2024.1.0.0 which is approved for the purpose of demonstrating compliance with the energy efficiency and carbon emission requirements of the building regulations.

These assessments were undertaken by an Energy Specialist; an individual who has acquired substantial expertise or a recognised qualification for undertaking assessments within the residential sector and is not professionally connected to a single technology or manufacturer.

It should be noted that the data generated by this work is obtained using computer calculations. These calculations 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 calculations have been undertaken in good faith using reasonable skill and care, Crookes Walker Consulting Limited can take no responsibility for differences between the computer calculations and the actual performance of the completed building due to the inherent complexity and variability of the physics in a building and its environment.

2.2 Thermal Model

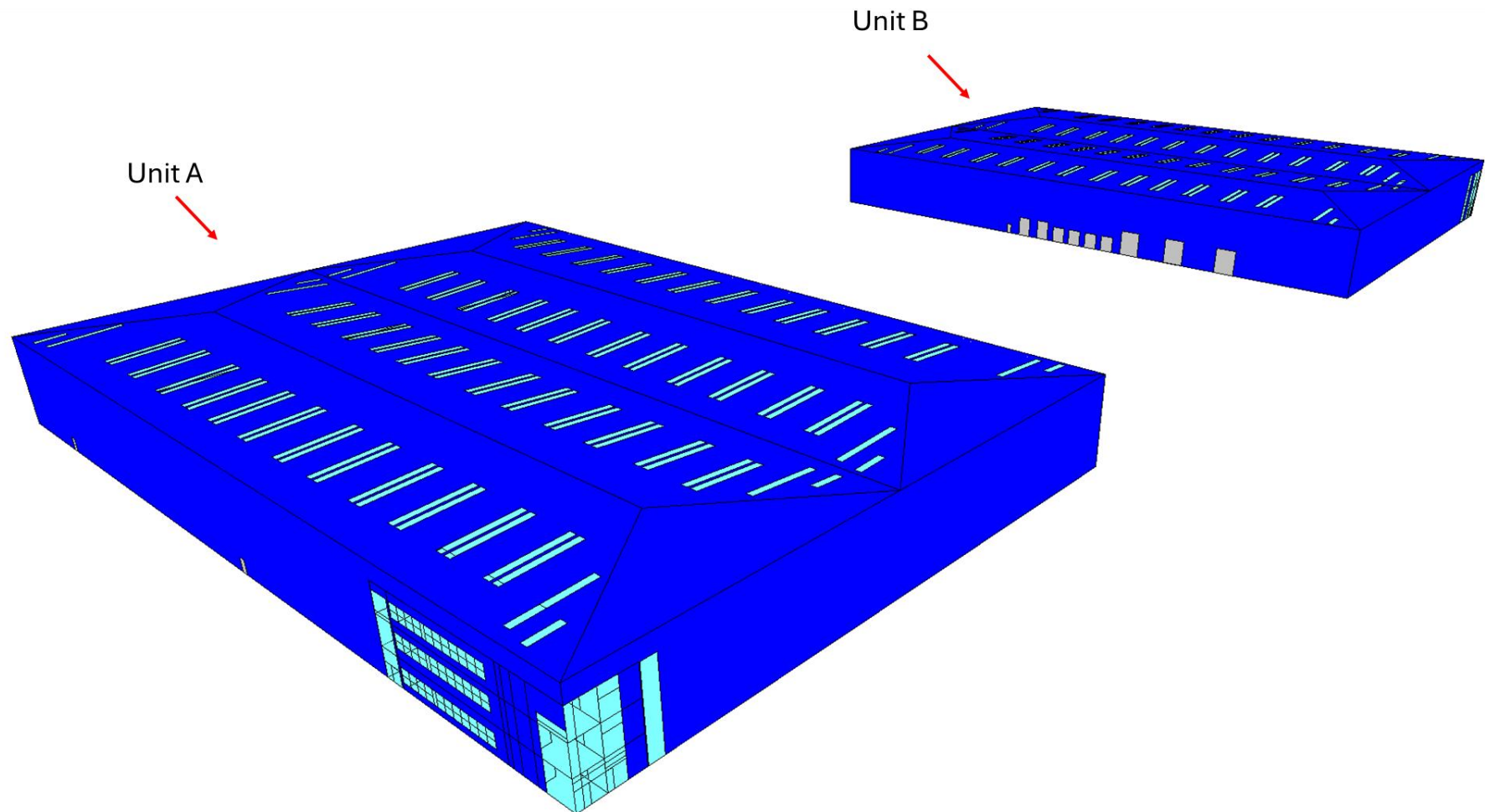


Figure 1. Thermal Model

3.0 Energy Strategy/Methodology

To achieve the stated requirements the proposals have been assessed as per the following, with this methodology to be followed as the design progresses:

- The consideration and incorporation of passive design solutions where feasible.
- The incorporation of energy efficiency measures through improved fabric performance and services.
- Calculation of the predicted design energy consumption rates and associated annual CO₂ emissions for the development, in accordance with the Building Regulations.

The following bullet points outline the proposed design solutions for the proposed Birch Business Park development, which will respond to the energy requirements of Rochdale Borough Council.

- A fabric first approach.
- Air tightness will be prioritised with optimised levels of permeability preventing heat loss via uncontrolled infiltration.
- Good solar control will be provided by the selection of glazing to avoid the risk of overheating during the summer months and increase the solar gains in the winter months.
- Natural daylighting will improve occupant comfort and reduce the requirement for artificial lighting, saving energy.

At this stage, an initial energy model has been developed for the building to estimate the building performance against each of the requirements.

3.1 Energy Efficient Services

A fabric first approach has been taken for The Field, Birch Business Park development. The environmental and energy benefits of this are discussed in a separate dedicated part of this Planning Application.

To support this efficient mechanical and electrical systems have been chosen, with the aim to reduce the energy consumption and carbon emissions with appropriate controls to manage the energy used during operation.

The following principles have been used in the development of the building services strategies:

3.1.1 Mechanical Ventilation with Heat Recovery (MVHR)

It is proposed to introduce mechanical ventilation with heat recovery for the office spaces. This will transfer heat from the exhaust air to preheat the supply air. The mechanical ventilation system is to incorporate high efficiency heat recovery with a target efficiency of 75%.

3.1.2 Building Services Insulation

Thermal insulation is to be provided in accordance with BS 5422: 2001 (Method for specifying thermal insulation materials for pipes, tanks, vessels, ductwork, and equipment operating within the temperature range, -40°C to +700°C) for the following:

- Reduce heat loss and hence conserve energy on all heated water and air systems.
- Prevent the formation of condensation on pipework and ductwork of equipment.
- All thermal insulation will be made from materials with zero ozone depletion potential (CF and HCFC free)

3.1.3 Motor Efficiency

All pumps and fans are to be provided with variable speed drives and high efficiency motors to reduce energy consumption and energy costs.

3.1.4 Low and Zero Carbon Technologies

The following LZC technology has been proposed for The Field, Birch Business Park development:

- Air Source Heat Pump for space heating and cooling.
- Photovoltaic panels are included in the proposed design. Table 2 below demonstrates the required annual PV energy generation for each unit to achieve compliance with the Approved Document L (2021).

Unit	A	B
PV Output (MWh/annum)	6	8.5

Table 2. Photovoltaic Panel Details

This provides an electric based solution eliminating the need for use of fossil fuels to heat the building. The PVs optimise the generation of power onsite.

3.1.5 Efficient Lighting Installations

Artificial lighting will be installed that will include the following:

- Energy efficient LED fittings.
- Daylight dimming controls.
- Presence detection.

4.0 Model Inputs

4.1 NCM Building Types

The proposed development has been assessed under the Building Classification: B8: Warehouse/storage (Warehouse).

The inputs detailed over the following pages have been taken from CIBSE Guide A, BSRIA Rules of Thumb (2024) 'Mechanical Criteria', NABERS Design for Performance (DFP), the current Building Council of Offices (BCO) recommendations and (for operational profiles) the expected use of the building once occupied.

4.2 Fabric Parameters

A fabric first approach has been taken for the Birch Business Park development, including u-values that are better than the minimum required for compliance with Building Regulations. Table 3 below confirms the fabric parameters assigned:

Element	Proposed area weighted u-value (W/m ² K)	Approved Document L (2021) Maximum u-value (W/m ² K)
External Walls	0.26	0.26
Ground Floor	0.18	0.18
Roof	0.18	0.18
Rooflights	2.20	2.20

Element	Proposed area weighted u-value ($\text{W/m}^2\text{K}$)	Approved Document L (2021) Maximum u-value ($\text{W/m}^2\text{K}$)
Windows	1.60	1.60
Vehicle Doors	1.3	1.3
Pedestrian Doors	1.6	1.6

Table 3. Fabric Parameters

Element	g-value	Light Transmittance
Windows	0.40	0.70
Rooflight	0.50	0.70

Table 4. Glazing Parameters

Design Value ($\text{m}^3/(\text{h.m}^2)$) @50 Pa	AD L (2021) Maximum Allowable Value ($\text{m}^3/(\text{h.m}^2)$) @50 Pa
3	8.00

Table 5. Air Permeability

4.3 System Parameters

Table 6 lists the proposed systems, and their performance figures, that have been used for this assessment. The warehouse storage area has been assessed as unheated.

System	Zone	Heating seasonal efficiency (SCoP)	Cooling seasonal efficiency (SEER)	Mech fan SFP (W/l/s)	Heat recovery efficiency (%)
HVAC 1: VRF with Zonal Supply & Extract Ventilation	Office	5.59	10.20*	2.09	75
HVAC 2: Electric Panel Heater with Zonal Extract Ventilation	WCs	1.00	N/A	0.50	-
HVAC 3: Electric Panel Heater with Natural Ventilation	Circulation	1.00	N/A	-	-

Table 6. System Parameters

**Enhanced manufacturer Part L compliant figure*

4.4 Domestic Hot Water

Table 7 confirms the DHW details.

System	Zone	Efficiency	Storage (Litres)	Storage Losses (kWh/l/day)
Electric DHW 1	Kitchen & Office	100%	30	0.025
Electric DHW 2	Accessible WC	100%	10	0.07
Electric DHW 3	All other WC	100%	15	0.056

Table 7. DHW Details

4.5 Lighting

Zone name	Luminaire Efficiency (lm/W)	Control Mechanism
Office	130	Occupancy Sensing & Daylight Dimming
Warehouse	150	Occupancy Sensing & Daylight Dimming
WCs	110	Occupancy Sensing
Circulation	110	Occupancy Sensing
Cupboard	110	Man On Auto Off

Table 8. Lighting Operation Details

5.0 Results

5.1 Rochdale Borough Council's sustainability objectives

- **Objective 6 – Support improved health and well-being of the population and reduce health inequalities:** The proposed warehouse avoids gas combustion or fossil-fuel-based heating systems. Instead, it uses clean, low-emission air-source heat pumps (ASHPs) and modern ventilation systems to promote better air quality for warehouse staff and surrounding communities.
- **Objective 10 – Improve Air Quality:** As a light industrial/logistics building, the design prioritises zero on-site combustion, reducing NO₂ and particulate emissions. This supports Rochdale's Air Quality Management Area (AQMA) goals, particularly by cutting pollutants from heating systems and enabling future electric vehicle (EV) integration. In addition to reducing direct emissions, the development includes the planting of native tree species around the site boundary. This contributes to improved local air quality, enhances biodiversity, and supports Rochdale's objectives on green infrastructure and climate resilience.
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5.2 Energy Performance Certificate

The development sited at The Field, Birch Business Park development is expected to achieve an EPC 'A' rating with an asset rating of '12' for both units A & B. This outcome is based on calculations using the input parameters outlined in this report. Table 9 highlights the Building Emission Rate (kgCO₂/m²) and Primary Energy Use kWh/m²/year) for units A&B.

Appendix 1 provides the draft anticipated EPC for Unit A, while Appendix 2 contains the draft anticipated EPC for Unit B.

Unit	Target Emission Rate kgCO ₂ /m ² /year	Building Emission Rate kgCO ₂ /m ² /year	Target Primary Energy Rate kWh/m ² /year	Building Primary Energy Use kWh/m ² /year	% Emission Rate Improvement over Part L Volume 2 2021	Projected EPC Rating
A	1.10	1.05	11.68	11.22	4.5	A (12)
B	1.11	1.06	11.84	11.27	4.5	A (12)

Table 9. EPC Rating, NCM Energy & NCM Carbon Emissions for each Unit.

5.1 BREEAM UK

The local planning requirements stipulate BREEAM 'Excellent' and actual credits achieved will be confirmed by the appointed BREEAM assessor.

6.0 Appendix 1 – Draft EPC Unit A

Energy Performance Certificate
Non-Domestic Building

 HM Government

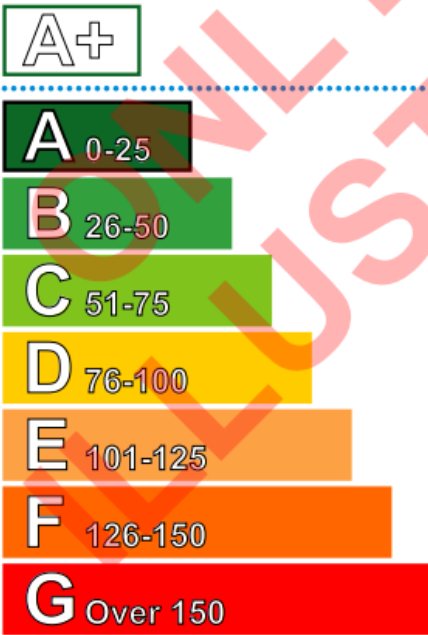
Whittle Lane. Heywood
Manchester
OL102SX

Certificate Reference Number:
5349-9530-1562-7660-1567

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient



A+
A 0-25
B 26-50
C 51-75
D 76-100
E 101-125
F 126-150
G Over 150

Net zero CO₂ emissions

 **12**

This is how energy efficient the building is.

Less energy efficient

Technical information

Main heating fuel:	Grid Supplied Electricity
Building environment:	Air Conditioning
Total useful floor area (m ²):	12153.203
Building complexity:	Level 5
Building emission rate (kgCO ₂ /m ² per year):	1.05
Primary energy use (kWh _{pe} /m ² per year):	11.22

Benchmarks

Buildings similar to this one could have ratings as follows:

 **13** If newly built

 **51** If typical of the existing stock

7.0 Appendix 2 – Draft EPC Unit B

Energy Performance Certificate
Non-Domestic Building

 HM Government

Whittle Lane. Heywood
Manchester
OL102SX

Certificate Reference Number:
0498-5533-7604-5018-5089

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient

A+

A 0-25

B 26-50

C 51-75

D 76-100

E 101-125

F 126-150

G Over 150

Net zero CO₂ emissions

◀ 12

This is how energy efficient the building is.

Less energy efficient

Technical information

Main heating fuel:	Grid Supplied Electricity
Building environment:	Air Conditioning
Total useful floor area (m ²):	12153.203
Building complexity:	Level 5
Building emission rate (kgCO ₂ /m ² per year):	1.06
Primary energy use (kWh _{pe} /m ² per year):	11.27

Benchmarks

Buildings similar to this one could have ratings as follows:

13

If newly built

51

If typical of the existing stock