



Energy Statement for Proposed Development, 1 Summer Street Rochdale Greater Manchester OL16 1SY



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Version	Revision	Date	Author	Reviewer
2	-	26/01/2026	Ruari Mulvenna	



Executive Summary

This Energy & Sustainability Statement has been prepared in support of a proposed commercial development consisting of multiple warehouse buildings designed for storage, distribution, workshop and associated office functions. The scheme adopts a modern industrial-style layout with consistent performance-led design specifications applied across all units.

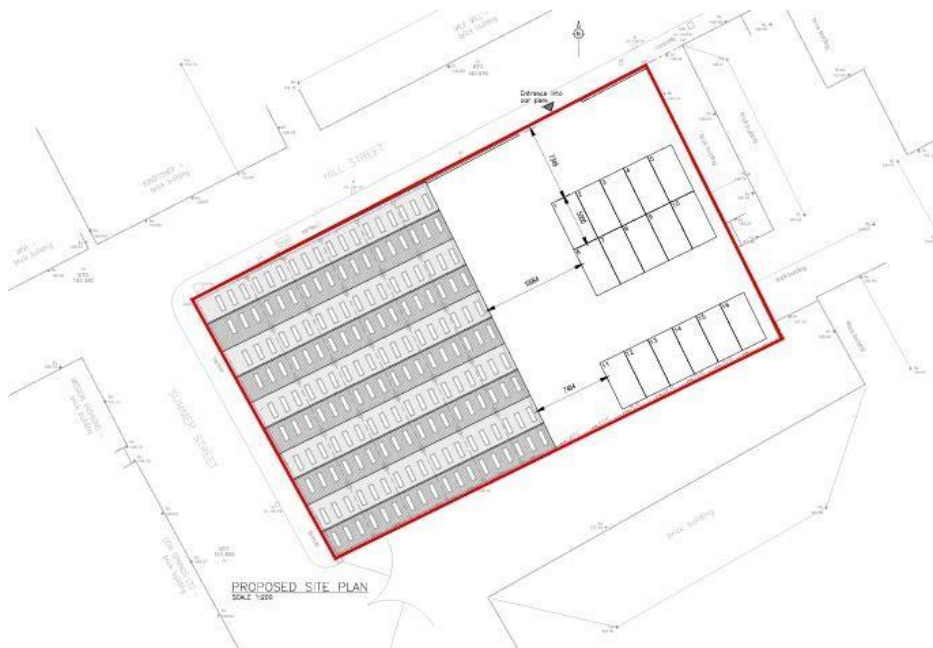
This Statement outlines how the proposed development aligns with national and local energy and sustainability policies. It sets out the key strategies being applied to reduce energy consumption, lower operational carbon emissions, and support long-term environmental performance.

A technical assessment has been undertaken using iSBEM (Simplified Building Energy Model), in accordance with Building Regulations Part L2A (2021). The results across all five buildings demonstrate compliance with both the Target Emission Rate (TER) and Target Primary Energy Rate (TPER), supported by a high-performance building fabric, improved airtightness, efficient electric heating systems, and LED lighting throughout.

The units incorporate enhanced insulation levels and an airtight envelope design, alongside high-efficiency Mechanical Ventilation with Heat Recovery (MVHR) systems and high-efficacy LED lighting throughout. On-site renewable electricity generation is provided via roof-mounted solar photovoltaic (PV) panels, which offset regulated electrical demand. Hot water is provided by efficient electric systems, and no active cooling systems are required within the units. This integrated design approach reduces regulated energy demand, lowers operational carbon emissions, and supports wider local and national climate objectives.

Water conservation measures, including the potential for low-flow sanitary fittings, are also incorporated to reduce mains water demand across the site.

This Energy Statement demonstrates that the proposed scheme has been designed to exceed minimum energy performance standards and deliver significant improvements over the notional baseline across all warehouses.



Location, Description & Accommodation

The building is an industrial development comprising five individual units, each incorporating a mezzanine floor. The units are designed for light industrial use (Use Class B2) and are arranged to provide flexible and efficient operational space.

At ground floor level, each unit offers open industrial accommodation suitable for a range of light manufacturing and workshop activities, while the mezzanine levels accommodate ancillary facilities including office space, kitchen areas, and toilet provision.

The layout has been designed to support the functional requirements of occupiers, with clear separation between operational and administrative areas, and to allow for adaptable use over the lifetime of the building. With both internal and external storage space and parking.

Building	Floor Area (m ²)	TER (kgCO ₂ /m ² /yr)	BER (kgCO ₂ /m ² /yr)	BPER (kWh/m ² /yr)	TER/TPER Pass?
Unit 1	210	11.05	7.23	76.64	✓ / ✓
Unit 2	203	11.05	7.23	76.64	✓ / ✓
Unit 3	200	11.05	7.23	76.64	✓ / ✓
Unit 4	197	11.05	7.23	76.64	✓ / ✓
Unit 5	194	11.05	7.23	76.64	✓ / ✓

The summary table above demonstrates that all five buildings within the development achieve strong compliance with Building Regulations Part L (2021), with every unit comfortably meeting both the Target Emission Rate (TER) and Target Primary Energy Rate (TPER). The combination of a highly insulated, airtight building fabric and fully electric building services significantly reduces regulated energy demand. As a result, all units achieve **passing BER and BPER values**.



Planning Policy Regulations

Several policies and standards have been established to guide the building development towards significant energy demand and carbon dioxide emission reductions. These include planning policies, compliance standards within regulatory framework and sustainability assessment criteria.

The principal elements are reviewed below.

National Planning Policy

In addition to local planning policy, the National Planning Policy Framework (NPPF) is a key material consideration. The most recent version, published in December 2024 and corrected in February 2025, replaces all former planning policy statements and guidance.

The NPPF emphasises that the planning system should actively guide development toward sustainable solutions, supporting the delivery of well-designed, energy-efficient, and climate-resilient buildings. It defines three interdependent objectives of sustainable development:

Economic Objective

To build a strong, responsive, and competitive economy by ensuring land is available in the right locations, supporting innovation and business growth, and providing infrastructure that meets current and future needs.

Social Objective

To support strong and healthy communities by ensuring access to sustainable employment opportunities, high-quality places, and inclusive local services, improving quality of life and social cohesion.

Environmental Objective

To protect and enhance the natural, built, and historic environment, minimise waste and pollution, improve biodiversity, and promote energy efficiency and low-carbon development in response to climate change.

The NPPF (2024) reinforces the importance of applying the energy hierarchy, maximising energy efficiency, and supporting renewable and low-carbon energy projects—particularly for redevelopment of existing sites where carbon savings can be optimised through targeted interventions.

Local Planning Policy – Greater Manchester Council

The proposed commercial redevelopment lies within the jurisdiction of , which has declared a climate emergency and is committed to achieving **net zero carbon by 2038**. Its local policies align closely with the principles of the NPPF and prioritise:

- High environmental performance in both new builds and refurbishments;
- Minimising energy consumption through fabric improvements and efficient systems;
- Maximising the use of on-site renewables;
- Future-proofing development in the face of climate change.

The key policy documents informing the design of this development include:

Council Core Strategy (2012) – Relevant Policies:

- **Policy EN4 – Reducing CO₂ Emissions**

Development should demonstrate how it will reduce carbon emissions in line with the city's climate goals. This proposal addresses this through fabric enhancements, efficient building services, and the use of on-site renewable energy systems.

- **Policy EN6 – Target Framework for CO₂ Reductions**

Proposals must show how the energy hierarchy has been applied. This scheme prioritises demand reduction through a fabric-first approach, supported by low-carbon heating and solar PV installation to offset remaining emissions.

- **Policy EN8 – Adaptation to Climate Change**

Developments should be designed to adapt to future climate conditions through passive design, resilient building materials, and sustainable drainage systems (SuDS), all of which are integrated into this proposal.

- **Policy DM1 – Development Management**

The redevelopment supports sustainable economic growth through high-quality, energy-efficient commercial space that responds positively to its urban context and meets modern environmental standards.

Sustainability Strategy for the Development

The proposed redevelopment aligns with national and local sustainability objectives through a coordinated package of measures, including:

- **Fabric-first enhancements:** Improved insulation and glazing to reduce heat loss;
- **Low-carbon ventilation and heat recovery:** Use of high-efficiency Mechanical Ventilation with Heat Recovery (MVHR) systems to minimise space-heating demand through effective heat recovery;
- **On-site renewable energy:** Installation of solar PV arrays where feasible;
- **Efficient services:** High-specification LED lighting, smart controls, and ventilation;
- **Water and drainage:** Integration of low-flow fixtures and SuDS to manage surface water;
- **Biodiversity:** Enhancement of external spaces through greening and habitat features, supporting Biodiversity Strategy;
- **Compliance with Part L 2021 (non-domestic):** Demonstrating compliance with minimum energy efficiency and carbon performance criteria, in line with the Building Regulations update that came into effect in June 2022.

5.0 Energy Hierarchy Approach

The energy strategy for this development follows the established Energy Hierarchy, which is a guiding principle in reducing operational carbon emissions and energy use:

Be Lean – Use Less Energy

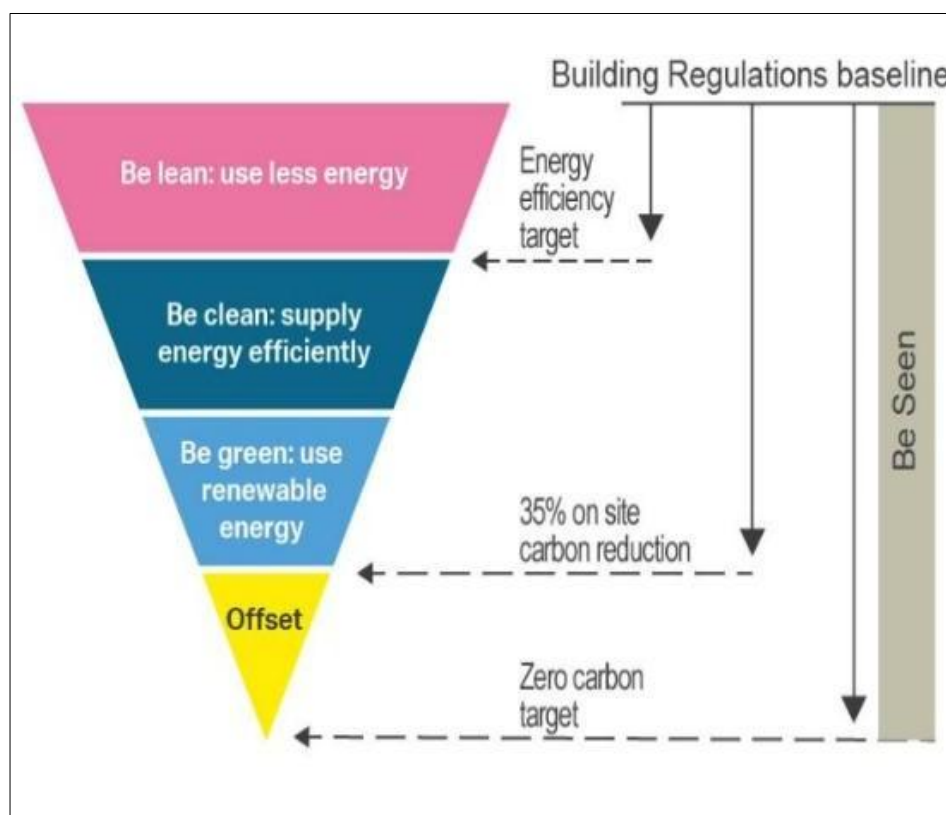
The scheme prioritises a fabric-first approach, optimising insulation levels, minimising air permeability, and eliminating thermal bridges. This ensures reduced heating and cooling demand through passive design measures that exceed minimum regulatory standards.

Be Clean – Supply Energy Efficiently

High-efficiency gas boilers will be installed in the heated office areas, supported by high-performance HVAC systems and LED lighting. Equipment has been selected to maximise energy efficiency, recover waste heat where appropriate, and minimise internal gains.

Be Green – Use Renewable Energy

The scheme includes roof-mounted (PV) panels, contributing to the site's electrical demand and reducing reliance on grid electricity. The system is sized to optimise output within available space.



Building Fabric & Energy Efficiency

The development is based on a fabric-led strategy, with careful specification of materials and construction methods to reduce thermal losses across the building envelope. The thermal performance of key elements has been designed to exceed regulatory minimums, with Part L 2021 U-values used as a baseline for compliance.

Heat loss in commercial buildings typically occurs through the external walls, ground floors, roofs, glazing, and thermal bridging at construction junctions. The development responds to this through:

- High-specification insulation in floors, walls, and roofs;
- Enhanced glazing with low U-values;
- Airtight construction techniques to limit uncontrolled air infiltration;
- Minimisation of cold bridging through careful detailing.

This approach helps reduce the building's base heating and cooling loads, enabling smaller and more efficient mechanical systems. It supports long-term operational efficiency, improves occupant comfort, and reduces carbon emissions without excessive reliance on bolt-on renewable systems.

The strategy promotes cost-effective and robust carbon reduction by limiting energy demand at source, in line with the principles of sustainable development and policy expectations.

Construction Element	Specification
Wall (standard)	U=0.18 W/m ² K
Ground	U=0.13 W/m ² K
Roof	U=0.15 W/m ² K
Glazing	U=1.4 W/m ² K (Double glazed) G=0.63
Air Permeability	5 m ³ /hm ² (@50Pa.)
Ventilation	Both Naturally Ventilated or Mechanical Extract Based on Usage
Lighting	100% Energy Efficient LED Lighting
Main Heating	Electric Heating / MVHR
Renewables	Roof Mounted PV Array
Thermal Bridge	Refer to specific Thermal Bridges section in report
Heating Control	Time & Temperature Zone Control

Table 2 – Energy Hierarchy

The following values from the Building Alliance Recognised Construction Details have been utilised:

- E7: Party Floor – 0.05 psi value (where applicable)
- E18: Party Wall – 0.06 psi value
- E2: Lintels – 0.2 psi value
- E3: Sill – 0.02 psi value
- E4: Jamb – 0.005 psi value
- E16: Corner – 0.09 psi value (where applicable)
- E17: Inverted Corner – 0.09 psi value (where applicable)
- E14: Flat Roof – 0 psi value (where applicable)

Energy Efficiency Measures

To improve the efficiency of the lighting systems all areas will be illuminated with LED fittings. Lighting control will include an intelligent lighting control system comprising passive detection and daylight detection.

External lighting will be switched by photocell and time clock with separate control for different lighting. Presence detection will be used within the common area lighting to minimum levels if unoccupied.

The proposed low energy lighting provision and control systems for the space and water heating will also ensure the energy consumed by the building is used efficiently, as per the second principle of the Energy Hierarchy. The energy uses have been critically assessed and the opportunities to decrease energy use and matching the remaining energy requirements with the most appropriate application.

Environmental Design

This building types are an inherently efficient form of construction, both in terms of the materials required to build the unit and the on-going space heating energy demand. This is a result of relatively low areas of external heat loss elements associated with such layouts.

These factors combine to enhance the energy efficiency of the building and low energy demand throughout their occupation.

The material specification and building construction methodology, which will be incorporated within this development provide the following benefits.

- Good levels of thermal insulation to reduce heat loss through external build elements.
- Highly efficient double-glazing units and insulated doors.
- Detailing to limit heat losses through thermal bridging; and
- Detailing to limit heat losses through air permeability.

Efficient servicing and automated controls will improve the efficiency of operation and optimise the occupant's comfort.

Water Demand Management

Water demand for the development will be managed and designed to reduce mains/potable water and include water efficient devices and equipment.

- A water efficiency strategy will be determined for the site to include 'A' rated appliances (where provided)
- The development will incorporate low-flow water fittings and explore the use of greywater recycling systems to reduce potable water demand and promote sustainable water management across the site.

Carbon Factors

Compliant CO₂ emission factors were used to convert the energy requirement figures into CO₂ emissions for the development.

Energy Requirements & CO₂ Emissions Appraisal (All Six Buildings)

This section summarises the expected energy requirements and CO₂ emissions associated with the site. The analysis follows the energy hierarchy and is based on the completed SBEM BRUKL assessments for each building. The strategy demonstrates strong compliance with Building Regulations Part L (2021), with all units delivering significant improvements over the notional baseline through a combination of enhanced building fabric, efficient all- electric systems, and extensive on-site photovoltaic generation.

Be Lean – Minimising Energy Demand

A **fabric-first approach** has been applied across the entire development to minimise heating demand and enhance baseline thermal efficiency before introducing active systems. The following lean design measures are incorporated consistently across all six buildings:

- **High-performance building envelope:** External wall U-values fall within **0.17–0.18 W/m²K**, with roof constructions achieving **0.15–0.16 W/m²K**, depending on building type.
- **Improved airtightness:** All buildings are designed to achieve an air permeability of **5 m³/h·m² @50 Pa**, a notable improvement over the regulatory threshold of 8. This reduces uncontrolled infiltration losses and supports stable internal temperatures even with minimal heating inputs.
- **Simplified, low-loss glazing strategy:** The warehouses and storage building incorporate no glazed elements or rooflights, automatically reducing both conductive heat losses and unwanted solar gains. This also simplifies thermal-bridging performance across the envelope.
- **High-efficiency LED lighting:** All units utilise LED luminaires with efficacies in the range of **95–108 lm/W**, exceeding the notional building standards and helping to lower regulated electrical demand.

Together, these measures produce a set of buildings with inherently low heating loads, reduced fabric heat transfer, and significantly improved conductance values relative to their notional counterparts. This strong leaning performance forms the foundation of the development's overall energy and carbon reductions.

Be Clean – Efficient All-Electric Services

All five buildings are designed as fully electric developments, removing all direct on-site fossil fuel use and ensuring long-term alignment with grid decarbonisation.

Given that the site is outside any designated district heating zone, and with no viable ambient or high-temperature networks available locally, independent electric systems represent the most appropriate and lowest-carbon solution for the development.

Be Green – On-Site Renewable Energy Generation

Carbon reductions across the scheme are primarily achieved through the implementation of high-efficiency Mechanical Ventilation with Heat Recovery (MVHR) systems in conjunction with on-site solar photovoltaic (PV) generation. The MVHR systems are designed to recover heat from extracted air and transfer it to incoming fresh air, thereby significantly reducing space-heating demand and associated regulated energy consumption. Heat recovery efficiencies of up to 85–90% are assumed within the BRUKL assessment, delivering a meaningful reduction in heating loads when compared to a notional mechanically ventilated system without heat recovery.

In parallel, the roof-mounted solar PV array provides low-carbon, on-site electricity generation which directly offsets regulated electrical demand within the units. This renewable contribution reduces grid electricity consumption, lowers operational CO₂ emissions, and results in a measurable improvement against the Part L notional baseline.

Collectively, the MVHR and PV strategy delivers a robust improvement in overall building performance, contributes materially to the scheme's BRUKL compliance position, and enhances the development's resilience to future increases in energy costs and grid carbon factors.

Conclusion – Energy & CO2 Emissions

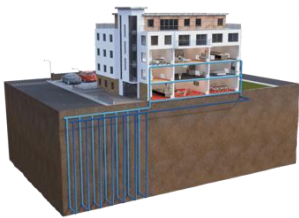
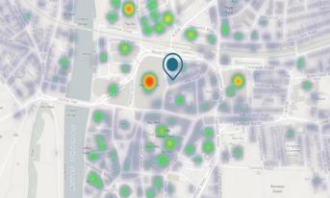
This Energy Statement demonstrates that the proposed redevelopment at 1 Summer Street, Greater Manchester delivers a robust improvement in energy performance and achieves compliance with the requirements of Part L (2021) for non-domestic buildings. A fabric-first approach has been adopted, incorporating enhanced insulation levels, improved airtightness, and targeted thermal-bridge mitigation measures, resulting in a meaningful reduction in heat loss and baseline energy demand.

Building services have been designed in line with current best practice, including the installation of high-efficiency LED lighting throughout and the incorporation of Mechanical Ventilation with Heat Recovery (MVHR) systems to reduce space-heating demand through effective heat recovery. In addition, roof-mounted solar photovoltaic (PV) panels provide on-site renewable electricity generation, directly offsetting regulated electrical demand and reducing operational carbon emissions.

The provision of EV charging infrastructure supports low-carbon transport objectives and helps futureproof the development in line with Greater Manchester and national decarbonisation policies. Collectively, these measures deliver a clear improvement in regulated energy consumption, carbon emissions, and overall operational performance when compared to the existing building. The redevelopment enhances occupant comfort, reduces running costs, and supports wider local and national climate-change objectives. Full SBEM outputs, BRUKL compliance documentation, and updated EPC information are provided in the appendices for reference.

Appendix A – Appraisal of Different LZC Technology

Photovoltaics (solar panels) 	Most effective on south facing orientations. Can be mounted on the roof ground or used as a cladding system. Low maintenance once installed.	Possibly suited to this scale of development and proposed.
Solar Thermal 	Most effective on south facing orientations. Available in a range of sizes. Best suited to individual buildings Low maintenance once installed. Evacuated tubes are more expensive than flat plate systems due to more advanced design	Not Suited to this Development Scale
Biomass Heating 	Significant storage space is needed for the biomass chips or pellets. Reliability of fuel source would be a potential concern and additional boiler capacity is typically required for resilience doubling up on boiler capacity. Delivery of pellets/chips can cause dust and noise pollution with very significant delivery numbers. Maybe a conflict with smokeless zones.	Not Suited to this Development
CHP 	Most suitable for larger mixed-use schemes where there is a constant demand for electrical energy and heat. Used in association with conventional gas fired boilers. There is the potential to connect to wider district heating schemes. Requires a base heating load to operate economically and efficiently. A variable hot water load reduces the base load. Gas is less sustainable due to the ongoing decarbonisation of the mains electric grid.	Not Suited to this Development

Wind Energy 	Large wind turbines not suitable for confined urban areas. The visual and noise impact on adjacent areas can be significant. Relatively high wind speeds needed so not suitable in built up city locations.	Not suited to development due to site constraints
Ground Source Heat Pump 	Can be laid horizontally or vertically as boreholes. The former only being suitable for non-commercial applications. Site constraints non conducive to boreholes or energy piles	Not suited to development due to site constraints.
Air Source Heat Pumps 	Can be used where there is limited space and unsuitable ground conditions. Suitable for producing heating, cooling, and domestic hot water. The efficiency of heat pumps can be as high as 350% (COP of 3.5). Works most efficiently at lower temperatures necessitating larger pipe work, radiators to compensate for the lower water temperature. Typical ASHP systems have life spans of around 15 years. Noise from the condensers needs to be carefully considered	Suited to this Development and under consideration
District Heating 	The use of a district heating network is currently unavailable for use by the property due to it's location it cannot be considered for a possible new connection.	Not Suited to this Development

Project name

Warehouse 1

As designed

Date: Sun Nov 23 18:44:54 2025

Administrative information

Building Details

Address: Warehouse 1, 1 Summer Street, Rochdale,
Greater Manchester, OL16 1SY

Certifier details

Name: Focus360Energy

Telephone number:

Address: , , -

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: iSBEM

Interface to calculation engine version: v6.1.e

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 70The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	20.74
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	12.35
Target primary energy rate (TPER), kWh _{eq} /m ² annum	219.94
Building primary energy rate (BPER), kWh _{eq} /m ² annum	130.67
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _o -Limit	U _o -Calc	U _o -Calc	First surface with maximum value
Walls*	0.26	0.18	0.18	Main Space/s
Floors	0.18	0.13	0.13	Main Space/f
Pitched roofs	0.16	0.15	0.15	Office 01/c
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1.4	1.4	Glazed Unit 02
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1	1	Entrance Door
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors
U _o -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _o -Calc = Calculated area-weighted average U-values [W/(m ² K)] * Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows. ** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position. ^ For fire doors, limiting U-value is 1.8 W/m ² K. NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.				

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	>0.95

1- ASHP

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					YES
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps.					

1- Default HWS

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	Hot water provided by HVAC system	-
Standard value	N/A	N/A

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
	ID of system type	A	B	C	D	E	F	G	H	I		
	Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1	Zone	Standard
Main Space		-	-	-	-	1.5	-	-	-	-	0.8	N/A

General lighting and display lighting

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
Main Space		95	-	-
Office 01		95	-	-
Canteen 01		95	-	-
Female WC		95	-	-
Male WC		95	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
Main Space	N/A	N/A
Office 01	NO (-6.2%)	YES
Canteen 01	NO (-8.8%)	YES

Regulation 25A: Consideration of high efficiency alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	YES
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m ²]	63	63
External area [m ²]	252	252
Weather	MAN	MAN
Infiltration [m ³ /h/m ² @ 50Pa]	5	5
Average conductance [W/K]	70.92	84.13
Average U-value [W/m ² K]	0.28	0.33
Alpha value* [%]	88.33	85.51

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
100	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	54.46	102.4
Cooling	0	0
Auxiliary	4.3	14.86
Lighting	21.46	15.56
Hot water	6.95	14.06
Equipment*	39.93	39.93
TOTAL**	87.17	146.88

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	0	0

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	747.69	1043.82
Primary energy [kWh _{UE} /m ²]	130.67	219.94
Total emissions [kg/m ²]	12.35	20.74

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Warehouse 2

As designed

Date: Thu Nov 27 09:34:56 2025

Administrative Information

Building Details

Address: Warehouse 2, 1 Summer Street, Rochdale,
Greater Manchester, OL16 1SY

Certifier details

Name: Focus360Energy
Telephone number:
Address: ...

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.a.0
Interface to calculation engine: iSBEM
Interface to calculation engine version: v6.1.a
BRUKL compliance module version: v6.1.a.0

Foundation area [m²]: 70

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	11.05
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	7.23
Target primary energy rate (TPER), kWh _{tp} /m ² annum	117.18
Building primary energy rate (BPER), kWh _{tp} /m ² annum	76.64
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{area}	U _{code}	U _{code}	First surface with maximum value
Walls*	0.26	0.18	0.18	Main Space/s
Floors	0.18	0.1	0.1	Main Space/1
Pitched roofs	0.16	0.15	0.15	Office 01/c
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1.4	1.4	Glazed Unit 02
Rooflights***	2.2	-	-	No external rooflights
Personnel doors†	1.6	1	1	Entrance Door
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_{area} = Limiting area-weighted average U-values [W/m²K]

U_{code} = Calculated maximum individual element U-values [W/m²K]

U_{code} = Calculated area-weighted average U-values [W/m²K]

* Automatic U-value check by the tool does not apply to certain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position.

† For fire doors, limiting U-value is 1.6 W/m²K.

ND: Mezzan roof ventilators (inc. smoke vents), not swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

BRUKL Output Document



HM Government

Compliance with England Building Regulations Part L 2021

Project name

Warehouse 3

As designed

Date: Thu Nov 27 09:35:25 2025

Administrative information

Building Details

Address: Warehouse 3, 1 Summer Street, Rochdale,
Greater Manchester, OL16 1SY

Certifier details

Name: Focus360Energy

Telephone number:

Address: , , -

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: iSBEM

Interface to calculation engine version: v6.1.e

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 70

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	11.05
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	7.23
Target primary energy rate (TPER), kWh _{eq} /m ² annum	117.18
Building primary energy rate (BPER), kWh _{eq} /m ² annum	76.64
Do the building's emission and primary energy rates exceed the targets?	BER ≤< TER BPER ≤< TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{g-Limit}	U _{g-Calc}	U _{g-Calc}	First surface with maximum value
Walls*	0.25	0.18	0.18	Main Space/s
Floors	0.18	0.1	0.1	Main Space/f
Pitched roofs	0.18	0.15	0.15	Office 01/c
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1.4	1.4	Glazed Unit 02
Rooflights***	2.2	-	-	No external rooflights
Personnel doors [†]	1.8	1	1	Entrance Door
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_{g-Limit} = Limiting area-weighted average U-values [W/m²K]

U_{g-Calc} = Calculated area-weighted average U-values [W/m²K]

U_{g-Calc} = Calculated maximum individual element U-values [W/m²K]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position.

[†] For fire doors, limiting U-value is 1.8 W/m²K.

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

BRUKL Output Document



HM Government

Compliance with England Building Regulations Part L 2021

Project name

Warehouse 4

As designed

Date: Thu Nov 27 09:38:08 2025

Administrative information

Building Details

Address: Warehouse 4, 1 Summer Street, Rochdale,
Greater Manchester, OL16 1SY

Certifier details

Name: Focus360Energy

Telephone number:

Address: , , -

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: ISBEM

Interface to calculation engine version: v6.1.e

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 70

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	11.06
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	7.23
Target primary energy rate (TPER), kWh _{ep} /m ² annum	117.18
Building primary energy rate (BPER), kWh _{ep} /m ² annum	76.64
Do the building's emission and primary energy rates exceed the targets?	BER ≤< TER BPER ≤< TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{limit}	U _{calc}	U _{calc}	First surface with maximum value
Walls*	0.26	0.18	0.18	Main Space/s
Floors	0.18	0.1	0.1	Main Space/l
Pitched roofs	0.16	0.15	0.15	Office 01/c
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1.4	1.4	Glazed Unit 02
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1	1	Entrance Door
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_{limit} = Limiting area-weighted average U-values [W/(m²K)]

U_{calc} = Calculated maximum individual element U-values [W/(m²K)]

U_{calc} = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.6 W/m²K

NB: Neither roof ventilators (inc. amies vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5

Project name

Warehouse 5

As designed

Date: Thu Nov 27 09:36:45 2025

Administrative information

Building Details

Address: Warehouse 5, 1 Summer Street, Rochdale,
Greater Manchester, OL16 1SY

Certifier details

Name: Focus360Energy

Telephone number:

Address: , , -

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: iSBEM

Interface to calculation engine version: v6.1.e

BRUKL compliance module version: v6.1.e.0

Foundation area [m²]: 70The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² /annum	11.05
Building CO ₂ emission rate (BER), kgCO ₂ /m ² /annum	7.23
Target primary energy rate (TPER), kWh _{tp} /m ² /annum	117.18
Building primary energy rate (BPER), kWh _{tp} /m ² /annum	76.64
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _o -Limit	U _o -Calc	U _o -Calc	First surface with maximum value
Walls*	0.26	0.18	0.18	Main Space/s
Floors	0.18	0.1	0.1	Main Space/f
Pitched roofs	0.18	0.15	0.15	Office 01/c
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1.4	1.4	Glazed Unit 02
Rooflights***	2.2	-	-	No external rooflights
Personnel doors [†]	1.6	1	1	Entrance Door
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_o-Limit = Limiting area-weighted average U-values [W/(m²K)]U_o-Calc = Calculated maximum individual element U-values [W/(m²K)]U_o-Calc = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

† For fire doors, limiting U-value is 1.8 W/(m²K).

NB: Neither roof ventilators (i.e. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	5