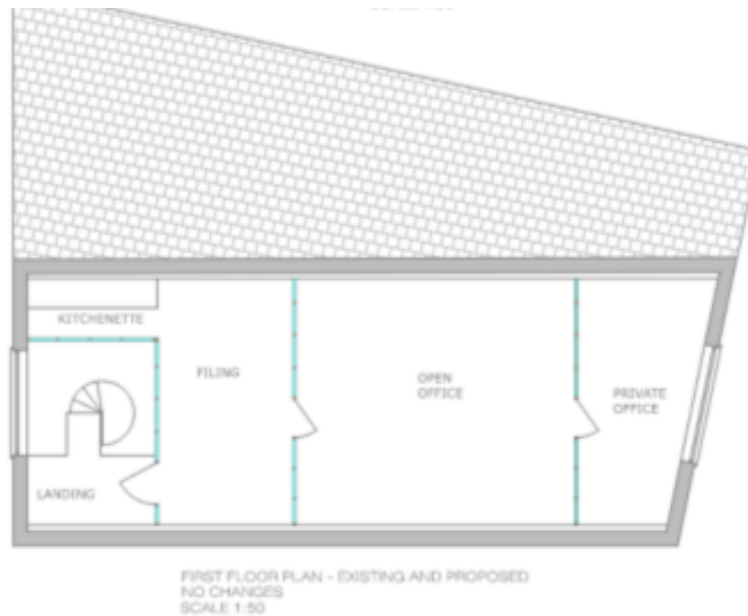
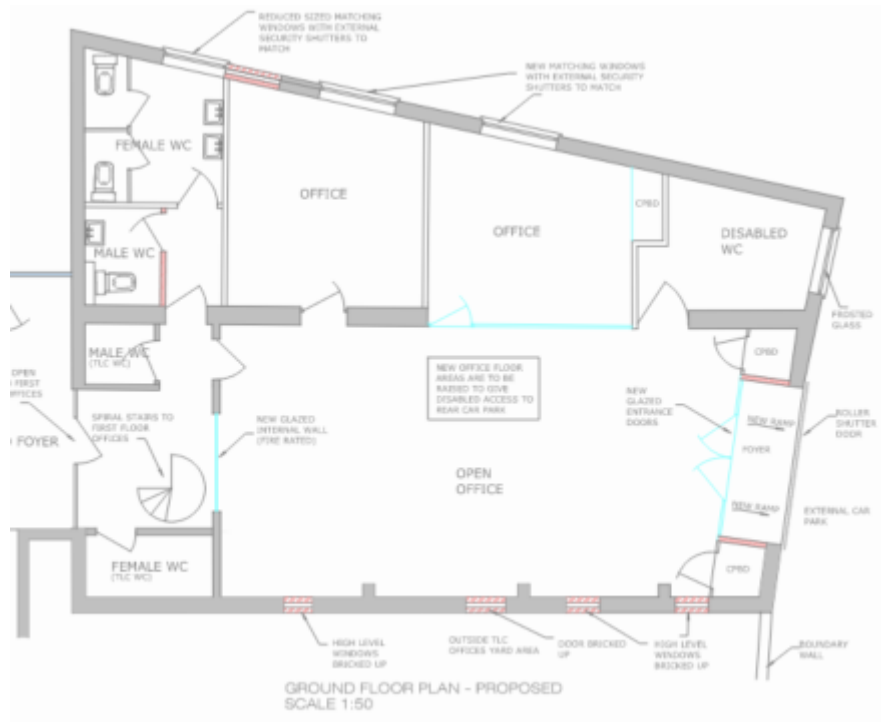


Energy Statement

for

**Phoenix Buildings,
Heywood Road, Prestwich,
Manchester
M25 1FN**



Version	Revision	Date	Author	Reviewer
1	-	21 st July 2025	RM	

Executive Summary

This Energy & Sustainability Statement has been prepared in support of the proposed commercial development at **Phoenix Buildings Heywood Road Prestwich, Manchester M25 1FN**. The scheme comprises of a single building designed for a combination of both storage/distribution and office use, arranged within a high-performance, modern industrial-style layout.

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

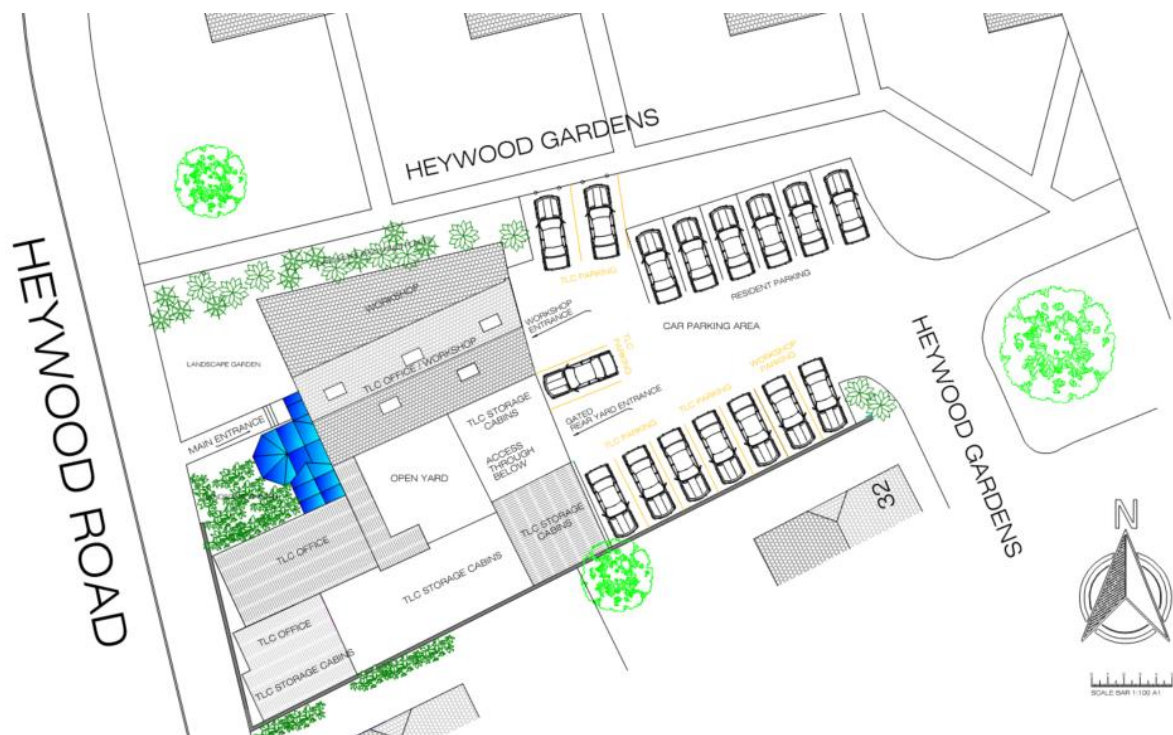
The report provides a detailed assessment of the predicted regulated energy demand and CO₂ emissions associated with the development. It highlights the energy-efficient building fabric specification, as well as the integration of low-carbon technologies such as **highly efficient gas boilers** for the heated office areas, and **roof-mounted photovoltaic (PV) panels** to generate on-site renewable electricity. The use of PV helps offset electricity demands from the site and contributes to broader carbon reduction goals by **utilising solar energy directly across the building and EV chargers**.

A technical assessment has been undertaken using iSBEM (Simplified Building Energy Model), in line with Part L2A of the Building Regulations. The results indicate that the development achieves a notable improvement over the notional baseline through a combination of fabric-first measures and efficient services design.

In addition to energy efficiency, the development also considers water conservation measures, including the potential for **greywater recycling systems** and low-flow sanitary fittings to reduce mains water demand across the site.

This Energy Statement demonstrates that the proposed scheme has been designed to exceed current energy performance standards of the existing building by over 50 percent while supporting wider environmental targets relating to climate change and resource efficiency.





Location, Description & Accommodation

The development consists of further commercial units arranged across the site, incorporating a mix of B2 & B8 Class usage with both internal and external storage space and parking.



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 – Manchester City Council

The proposed commercial redevelopment lies within the jurisdiction of **Manchester City Council**, 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:

Manchester 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.

Greater Manchester Combined Authority (GMCA) – Climate Commitments

The GMCA's 5-Year Environment Plan (2019–2024) commits to delivering carbon-neutral buildings and prioritises retrofitting and redevelopment of existing stock. This project contributes to that goal through reduced operational energy use and on-site decarbonisation.

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 heating:** Use of high-efficiency air source heat pumps (ASHPs);
- **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 Manchester's 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

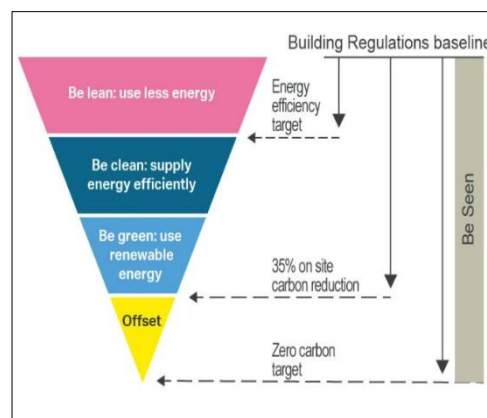
The scheme prioritises a fabric-first approach, optimising insulation levels, minimising air permeability, and eliminating thermal bridges. This ensures reduced heating and cooling demand through passive design measures that exceed minimum regulatory standards.

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 roof space and will support on-site generation.



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=0.16 W/m ² K
Roof	U=0.25 W/m ² K
Glazing	U=1.6 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	High efficiency Gas Boiler
Renewables	Array of roof mounted PV panels
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 and CO2 Emissions Appraisal

The following sections detail the passive design and energy efficiency measures that have been considered.

The following is an appraisal of the anticipated energy requirements and resultant CO2 emissions that are likely to arise because of the development, after the inclusion of the passive design and energy efficiency measures as previously described in this Energy Strategy.

The following sections detail the passive design and energy efficiency measures that have been considered and how these have been implemented at the development.

Passive design measures are those which reduce the energy demand within buildings and hence reduce both carbon emissions and energy use. Reducing the demand as a first step helps reduce the amount of work the building services systems within the building before examining the efficiency of the systems or the plant.

Energy Hierarchy

Be Lean

The building fabric and air permeability have been maximised to limit the energy demand via the building fabric. The building will all achieve a reduction in CO2 emissions beyond the Building Regulations Part L 2021 from passive design and energy efficiency measures.

Be Clean

The building is not located within an area served by district heating or any other centralized heating networks. As such, there are no available connections to district heating systems or similar services in the vicinity. Additionally, no plans exist for the installation of such infrastructure in the near future. The building's heating and energy systems are independently sourced, and there are no communal energy provisions available. Further savings and improvements in energy efficiency are achieved through the measures outlined in the 'Be Green' section of this statement, which focuses on sustainable energy solutions and reducing overall carbon emissions.

Be Green

In addition to passive design and energy efficiency measures, the development incorporates on-site renewable energy generation to further reduce carbon emissions. **Roof-mounted photovoltaic (PV) panels** will be installed on the building, generating clean electricity to help offset the operational energy demand of the building services, including the **air source heat pumps**.

This renewable strategy supports a meaningful reduction in regulated CO₂ emissions beyond the requirements of **Building Regulations Part L (2021)**, and contributes to long-term sustainability by utilising solar energy to power the site efficiently and responsibly.

Conclusion – Energy & CO2 Emissions

This Energy Statement demonstrates that the proposed commercial redevelopment delivers a significant uplift in energy performance compared to the existing building, fully aligning with the requirements of the 2021 Part L (Non-Domestic) Building Regulations.

The building fabric has been upgraded to meet current compliance standards, with improved U-values across all elements. This includes the replacement of existing glazing with high-performance double-glazed units, enhanced insulation to external walls and roof, and targeted thermal bridging mitigation. Together, these measures reduce heat loss and improve overall building efficiency.

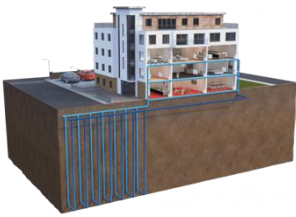
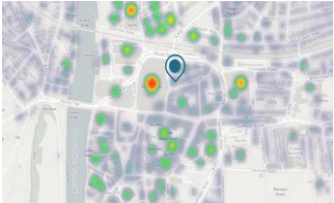
Internal services have also been modernised. All lighting has been replaced with high-efficiency LED fittings throughout, while the existing heating system has been fully serviced, rebalanced, and retained to operate more efficiently. Electric vehicle (EV) charging points have been installed to support sustainable transport and futureproof the site.

As a result of these combined improvements, the redeveloped building is now projected to achieve a 50% improvement in performance over the original EPC rating, with significantly lower regulated energy use and carbon emissions.

These upgrades contribute to national and local carbon reduction targets, enhance occupier comfort, reduce operational costs, and support the long-term value and resilience of the asset. Full SBEM outputs, compliance reports, and updated EPC documentation are included in the appendix 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.	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

Energy Performance Certificate
Non-Domestic Building



Phoenix Buildings
Heywood Road
Prestwich
Manchester
M25 1FN

Certificate Reference Number:
7371-3723-4465-8587-3318

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

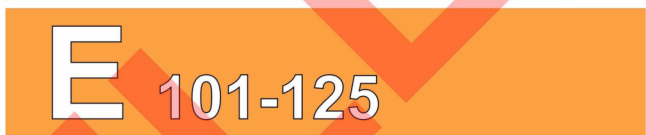
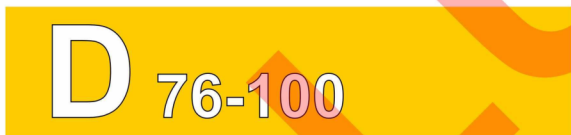
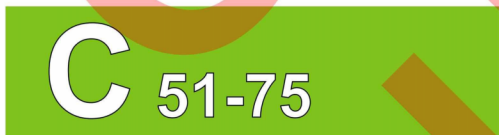


Net zero CO₂ emissions



24

This is how energy efficient the building is.



Less energy efficient

Technical information

Main heating fuel:	Natural Gas
Building environment:	Heating and Mechanical Ventilation
Total useful floor area (m ²):	193
Building complexity:	Level 3
Building emission rate (kgCO ₂ /m ² per year):	10.48
Primary energy use (kWh _{PE} /m ² per year):	57.36

Benchmarks

Buildings similar to this one could have ratings as follows:	
27	If newly built
108	If typical of the existing stock

Administrative information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software: iSBEM v6.1.e using calculation engine SBEM v6.1.e.0

Property Reference: UPRN-000000000000

Assessor Name: Focus360Energy

Assessor Number: ABCD000000

Accreditation Scheme: Information not available

Assessor Qualifications: NOS3

Employer/Trading Name:

Employer/Trading Address:

Issue Date: 22 Jul 2025

Valid Until: 21 Jul 2035 (unless superseded by a later certificate)

Related Party Disclosure: Not related to the owner

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report: 0653-8846-6284-3005-0276

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by Information not available. You can obtain contact details of the Accreditation Scheme at Information not available.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. For further information about how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

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Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property - whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.

Project name

Phoenix Buildings

As designed

Date: Tue Jul 22 14:21:56 2025

Administrative information

Building Details

Address: Phoenix Buildings, Heywood Road, Prestwich, Manchester, M25 1FN

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]: 127.5

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

Target CO ₂ emission rate (TER), kgCO ₂ /m²·annum	11.87
Building CO ₂ emission rate (BER), kgCO ₂ /m²·annum	10.48
Target primary energy rate (TPER), kWh _{PE} /m²·annum	60.5
Building primary energy rate (BPER), kWh _{PE} /m²·annum	57.36
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 _a -Limit	U _a -Calc	U _i -Calc	First surface with maximum value
Walls*	0.26	0.18	0.18	Male WC/w
Floors	0.18	0.16	0.19	Female WC/f
Pitched roofs	0.16	0.25	0.25	Male WC/c
Flat roofs	0.18	-	-	No heat loss flat roofs
Windows** and roof windows	1.6	1.6	1.6	Office 01/ne/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	1	1	New Glazed Doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors
U_a-Limit = Limiting area-weighted average U-values [W/(m²K)] U_a-Calc = Calculated area-weighted average U-values [W/(m²K)] U_i-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
m³/(h.m²) 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	YES
Whole building electric power factor achieved by power factor correction	<0.9

1- Main Space Heating

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.8	-	-	-	-
Standard value	0.93*	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 gas single boiler systems <=2 MW output and overall for multi-boiler systems. For single boiler systems >2 MW or any individual boiler in a multi-boiler system, limiting efficiency is 0.88.					

1- ASHP HWS

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	Hot water provided by HVAC system	0.009
Standard value	N/A	N/A

"No zones in project where local mechanical ventilation, exhaust, or terminal unit is applicable"

"LENI calculation for lighting energy provided in a separate submission."

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?
Office 01	NO (-22.7%)	NO
Office 02	NO (-22.7%)	NO
Open Office	N/A	N/A
Filing	N/A	N/A
Open Office FF	NO (-49.2%)	NO
Private Office FF	NO (-26.4%)	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			Building Use	
	Actual	Notional	% Area	Building Type
Floor area [m²]	193	193	100	Retail/Financial and Professional Services
External area [m²]	502.2	502.2		Restaurants and Cafes/Drinking Establishments/Takeaways
Weather	MAN	MAN		Offices and Workshop Businesses
Infiltration [m³/hm²@ 50Pa]	5	3		General Industrial and Special Industrial Groups
Average conductance [W/K]	136.24	212.18		Storage or Distribution
Average U-value [W/m²K]	0.27	0.42		Hotels
Alpha value* [%]	6.1	23.78		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

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

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	32.93	45.19
Cooling	0	0
Auxiliary	7.57	9.18
Lighting	43.69	6.65
Hot water	13.22	14.75
Equipment*	36.15	36.15
TOTAL **	97.41	75.77

* 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	48.96	21.06
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>48.96</i>	<i>21.06</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	197.7	201.01
Primary energy [kWh _{PE} /m²]	57.36	60.5
Total emissions [kg/m²]	10.48	11.87

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	89	108.7	32.9	0	7.6	0.75	0	0.8	0
	Notional	139.9	61.1	45.2	0	5	0.86	0	----	----

Key to terms

Heat dem [MJ/m2]	= Heating energy demand
Cool dem [MJ/m2]	= Cooling energy demand
Heat con [kWh/m2]	= Heating energy consumption
Cool con [kWh/m2]	= Cooling energy consumption
Aux con [kWh/m2]	= Auxiliary energy consumption
Heat SSEFF	= Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER	= Cooling system seasonal energy efficiency ratio
Heat gen SSEFF	= Heating generator seasonal efficiency
Cool gen SSEER	= Cooling generator seasonal energy efficiency ratio
ST	= System type
HS	= Heat source
HFT	= Heating fuel type
CFT	= Cooling fuel type