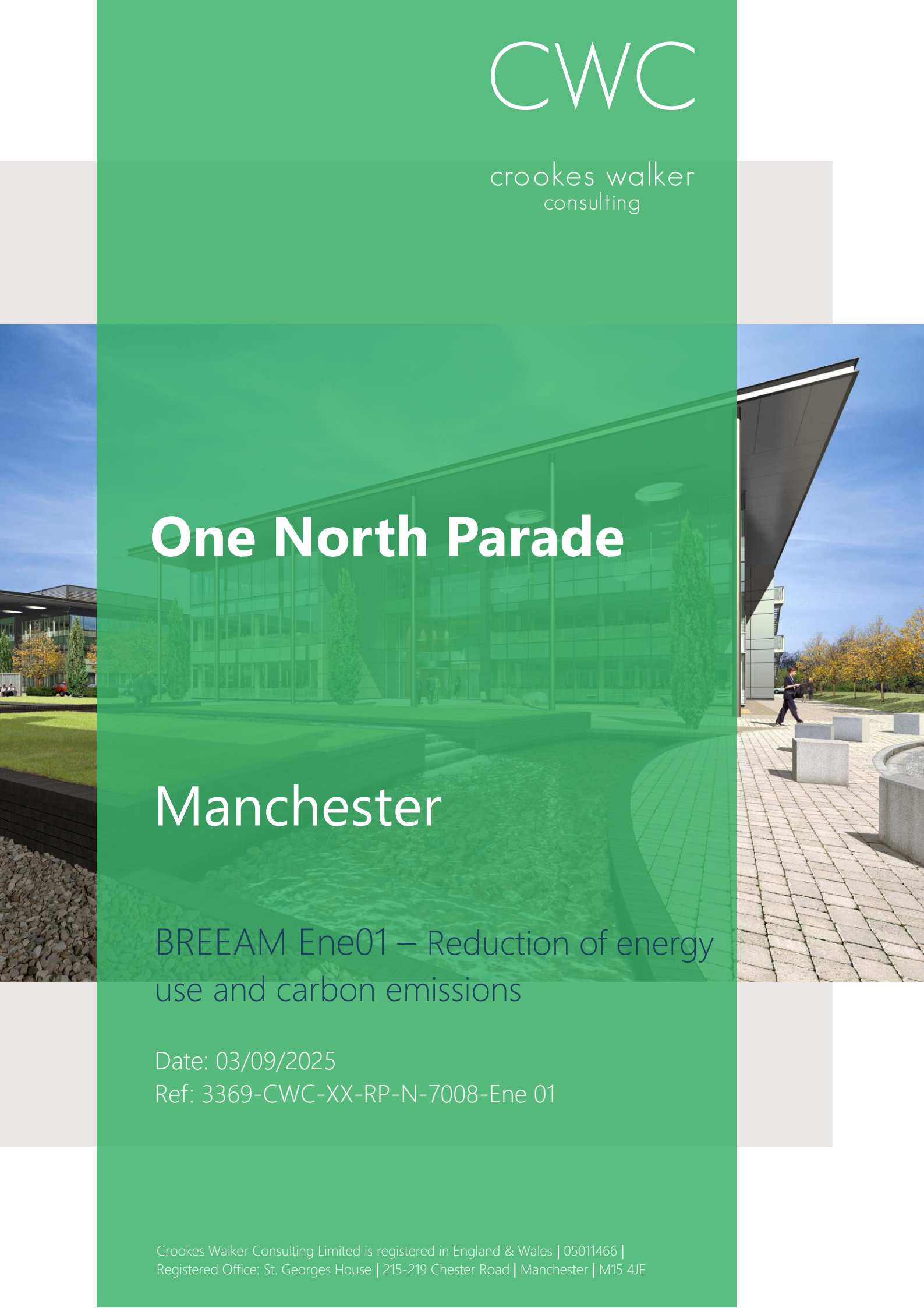




CWC

crookes walker
consulting

One North Parade

Manchester

BREEAM Ene01 – Reduction of energy
use and carbon emissions

Date: 03/09/2025

Ref: 3369-CWC-XX-RP-N-7008-Ene 01

Revision Record

Date	Reference	Revision	Prepared By	Checked By	Authorised By
31/01/2025	3369-CWC-XX-RP-N-7008	00	Nazhan Nizam	Obaid Rahman	John Barnett
			NN	OR	JB
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			NN	OR	JB
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			NN	OR	JB

Contents

- 1.0 Executive Summary..... 4
- 2.0 Introduction 5
 - 2.1 Site Location..... 5
 - 2.2 Modelling Disclaimer 5
 - 2.3 View of Thermal Model..... 6
- 3.0 Assessment Targets 8
 - 3.1 Manchester City Council Plan 2012-2027 8
 - 3.2 BREEAM Ene 01: Reduction in energy Use and Carbon Emissions..... 10
- 4.0 Input Parameters 12
 - 4.1 Fabric Parameters 12
 - 4.2 System Parameters..... 12
- 5.0 Results..... 14
 - 5.1 Manchester City Council Local Plan..... 14
 - 5.2 BREEAM Ene 01: Reduction in Energy Use and Carbon Emissions..... 14
- 6.0 Summary..... 15
- 7.0 Appendix 1 – BRUKL & EPC 16

1.0 Executive Summary

This report has been prepared to show the One North Parade development located in Manchester city centre, achieves compliance with BREEAM's *Ene 01: Reduction of energy use and carbon emissions*, and the Salford City Council Local Plan.

The proposed development will include open plan offices, a restaurant, bicycle storage, shower and changing facilities. Therefore, the development falls under Use Class E(g) (*Offices*) and E(b) (*Food and Drinks*) in accordance with the Town and Country Planning (Use Classes) Order 2020. For the purposes of the Approved Document Part L assessment within IES:VE, the building has been modelled under the 'B1 Offices' classification, as this remains the relevant category within the compliance software.

To achieve compliance with the energy targets, the following design features have been included, following the energy hierarchy approach:

- Enhanced fabric performance to reduce the initial energy demand
- High efficiency heat pump technology for space heating
- High efficiency LED lighting with PIR sensors throughout and daylight dimming in offices

Table 1 below summarises the results for these assessments, demonstrating the One North Parade proposed development achieves compliance with BREEAM Ene 01, and the Salford Council Local Plan. The development has the ability to achieve 6 no. BREEAM Ene 01 credits with the parameters stated within this report.

Results have been sent to the BREEAM assessor and the credits in stated in this report are subject to being approved by the assessor.

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 Rate kWh/m ² /year	% Emission Rate Improvement over Part L Volume 2 2021	Projected EPC Rating
3.30	2.80	36.01	30.69	14.7	A (8)

Table 1. Results Summary

2.0 Introduction

Crookes Walker Consulting Limited (CWC) have been commissioned to undertake energy assessments for the One North Parade development located in central Manchester City.

2.1 Site Location

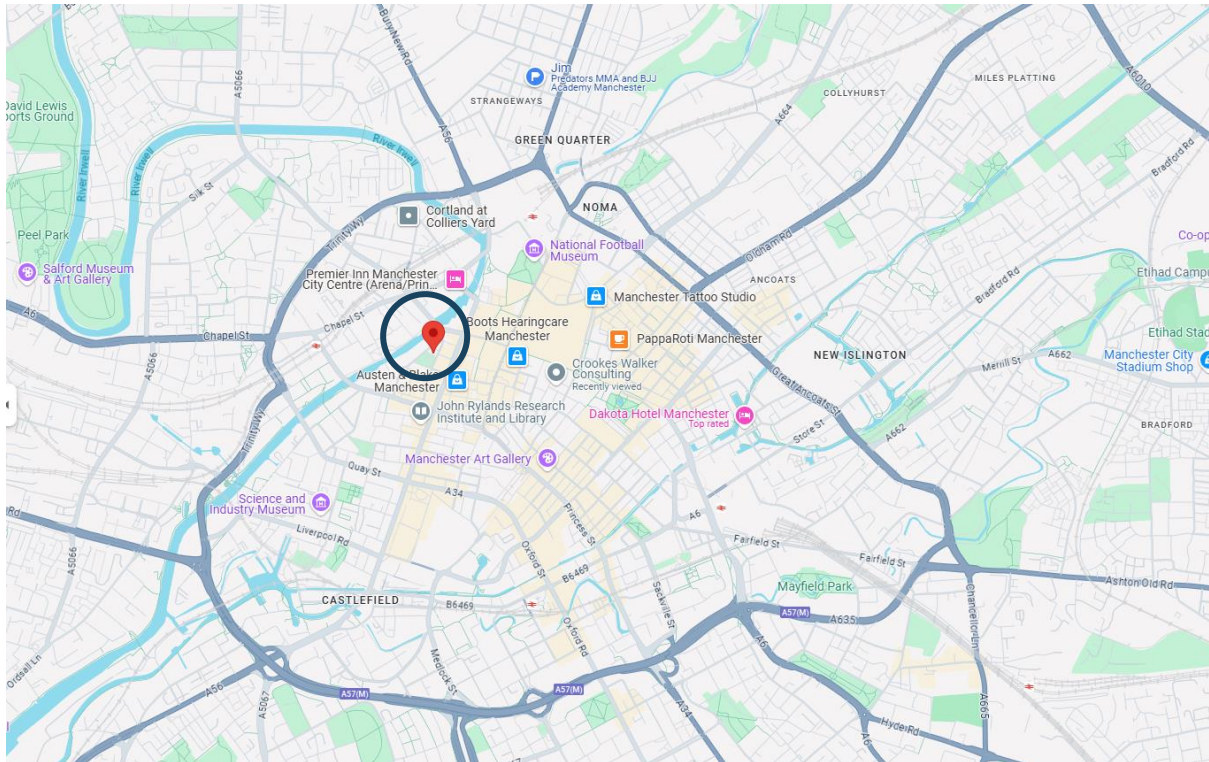


Figure 1. Location of site

The site is located at central Manchester city centre, therefore the Manchester TRY weather file has been used for the BREEAM Ene 01 assessments.

2.2 Modelling Disclaimer

The building has been modelled with accredited software package IES:VE accredited software Version 2024.0.1.0 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.

2.3 View of Thermal Model

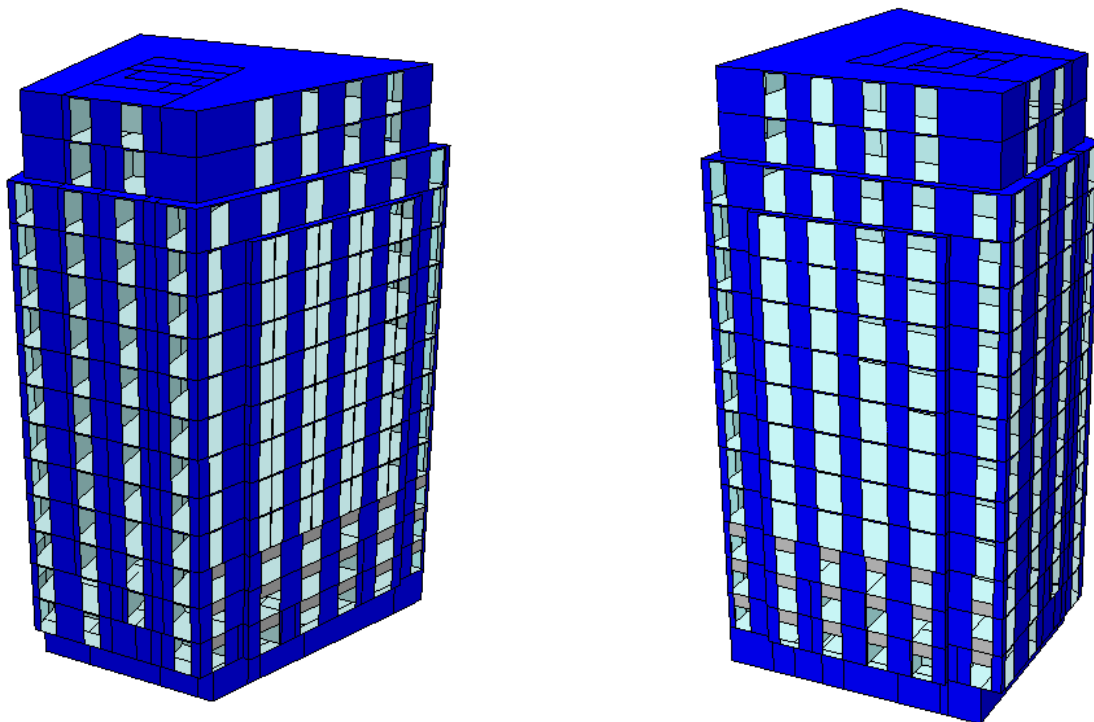


Figure 2. Thermal Model North view (left) and East view (right)

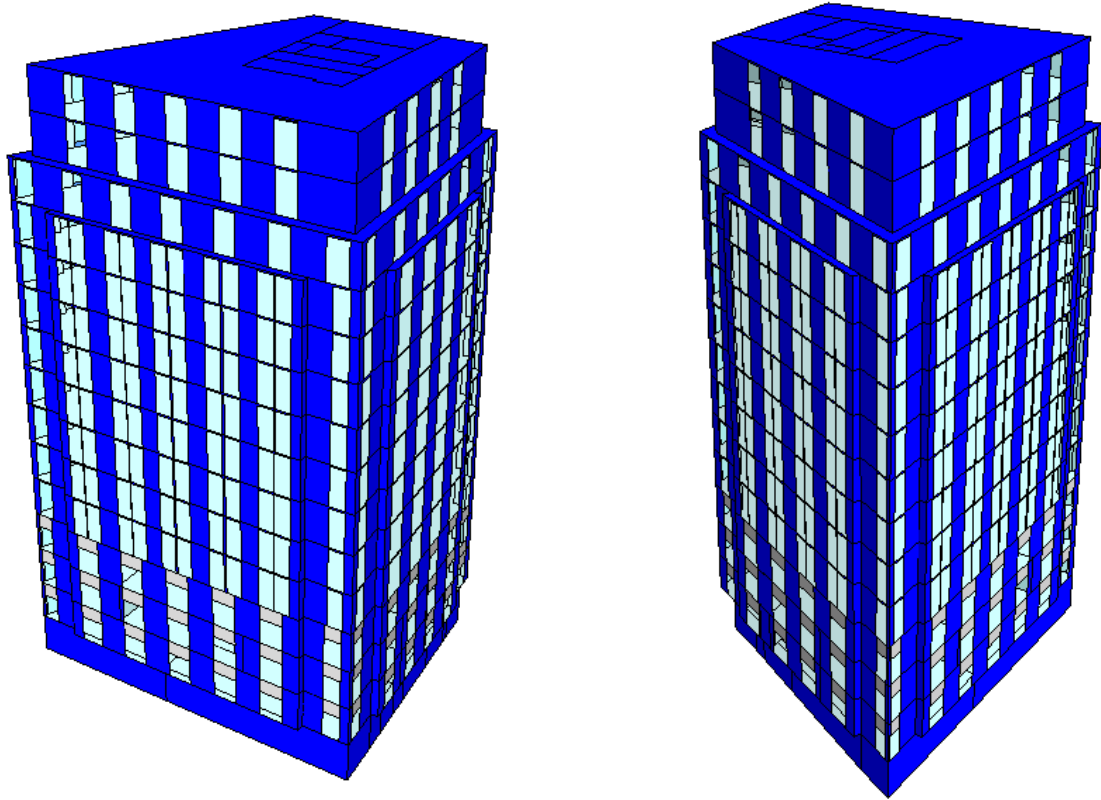


Figure 3. Thermal Model South view (left) and West view (right)

3.0 Assessment Targets

3.1 Manchester City Council Plan 2012-2027

Manchester's Core Strategy (CS) was adopted on 11th July 2012 and is the key Development Plan Document in the Local Development Framework (LDF). This assessment has considered of the Manchester Core Strategy, and as such, the One North Parade adheres to the policies.

Key Core Strategy Requirements

CS Policy DM 1 - Development Management requires all development to have regard to a number of development principles. Subject to scheme viability, developers may be required to demonstrate that new nondomestic development to achieve a BREEAM Rating of 'Very Good' or for domestic development to achieve the Code for Sustainable Homes standard.

CS Policy EN 4 - Reducing CO₂ Emissions by Enabling Low and Zero Carbon Development requires all development to follow the principle of the Energy Hierarchy, being designed:

- To reduce the need for energy through design features that provide passive heating, natural lighting, and cooling.
- To reduce the need for energy through energy efficient features such as improved insulation and glazing.
- To meet residual energy requirements using low or zero carbon energy generating technologies.

CS Policy EN 5 - Strategic Areas for low and zero carbon decentralised energy infrastructure include:

- District Centres and associated major development sites.
- Airport Strategic Site.
- Strategic housing location; and,
- Strategic employment locations. Within these areas, new development, regeneration and retrofit projects will be expected to take place in the context of more detailed proposals for decentralised low and zero carbon energy infrastructure in the form of energy proposals plans.

CS Policy EN 6 - Target Framework for CO₂ Reductions from Low or Zero Carbon Energy Supplies requires applications for residential development of 10 or more units and all other development over 1,000m² to meet, as a minimum, the targets shown in the tables below, unless unviable.

Target	% Minimum Requirement
Target 1: Network development area	CHP/District heating anchor or connection or where not feasible a 15% increase on Part L 2010
Target 2: Electricity intense buildings +10%increase on Part L 2010 (Applies to commercial uses with a high proportion of emissions from electricity use (>45 kg CO ₂ /m ²))	+10% increase on Part L 2010
Target 3: Micro generation area	+15% increase on Part L 2010

The Proposed Development falls under the Target 2 criteria and must comply with Part L (2021). The emission reductions targeted within policy EN6 relate to Building Regulation Part L 2010. Because of the reduction in emission rates required by current building regulations (Part L, 2021) relative to Part L 2010, the revised equivalent target CO₂ emission reductions for the residential scheme are presented below:

- Non-domestic – 6% building emission rate reduction over Part L 2013.

Please note that the Proposed Development will be compliance checked against the Part L (2021) Building Regulations. By virtue of complying with these emerging regulations, the scheme commits to reduce building carbon emissions by at least 27% in relation to Building Regulations Part L (2013) standards.

CS Policy EN 8 – Adaption to Climate Change requires all new development to be adaptable to climate change in terms of the design, layout, siting, and function of both buildings and associated external spaces. In achieving developments which are adaptable to climate change developers should have regard to the following, although this is not an exhaustive list:

- Minimisation of flood risk by appropriate siting, drainage, and treatment of surface areas to ensure rainwater permeability.
- Reduction in urban heat island effect using Green Infrastructure such as green roofs, green walls, increased tree cover and waterways.
- The need to control overheating of buildings through passive design; and
- The opportunity to provide linked and diverse green space to enhance natural habitats which will assist species adaptation.

CS Policy T 1 – Sustainable Transport aims to deliver a sustainable, high quality, integrated transport system to encourage modal shift away from car travel to public transport, cycling and walking, to support the needs of residents and businesses and to prepare for carbon free modes of transport, the Council will support proposals that:

- Improve choice by developing alternatives to the car.

- Promote regeneration and economic vitality by relieving traffic congestion and improving access to jobs and services, particularly for those most in need and for those without a car.
- Improve access to transport services and facilities to enable disabled people and people with mobility impairments to participate fully in public life.
- Improve pedestrian routes and the pedestrian environment.
- Improve and develop further Manchester's cycle network (for example the Manchester Cycleway and the Trans Pennine Trail); and
- Facilitate modes of transport that reduce carbon emissions e.g., by incorporating charging points for electric vehicles, subject to their appropriate design and location.

Table 2. Local Plan requirements

To summarise, the Manchester City Council Local Plan requires for commercial properties to comply with Part L of the Building Regulations, by achieving a betterment of 27% over 2013 Building Regulations and achieve a minimum BREEAM rating of 'Very good'. By ensuring that the One North Parade proposed development achieves compliance with Part L Volume 2 2021 of the English Building Regulations, the minimum 27% betterment is achieved due to the latest 2021 Building Regulations already having around a 30% reduction in carbon emissions than the previous 2013 Building Regulations.

3.2 BREEAM Ene 01: Reduction in energy Use and Carbon Emissions

Ene 01 aims to minimise operational energy demand, primary energy consumption and CO₂ emissions whilst encouraging consideration of operational aspects and energy performance in line with the World Green Building Council's policies.

Energy Performance

The development will have an Energy Performance Ratio: New Construction (EPRNC) calculated from a building modelled operational energy performance, primary energy consumption of CO₂-eq emissions, located in the BRUKL document which is produced for the Approved Document Part L assessment.

BREEAM credits	EPR _{NC}	Minimum standards	
		Rating	Minimum requirements
1	0.1		Requires a performance improvement progressively better than the relevant national building regulations compliant standard (see Energy performance).
2	0.2		
3	0.3		
4	0.4	Excellent	Requires 4 credits to be achieved (equivalent to an EPR _{NC} of at least 0.4) or 4 credits for Prediction of operational energy consumption (where operational energy performance has been substantially improved).
5	0.5		
6	0.6	Outstanding	Requires 6 credits to be achieved (equivalent to an EPR _{NC} of at least 0.6) and 4 credits for prediction of operational energy consumption .
7	0.7		
8	0.8		
9	0.9 AND zero net regulated CO ₂ -eq emissions*.		

Figure 4. Ene 01 EPR_{NC} benchmark scale for New Construction

4.0 Input Parameters

4.1 Fabric Parameters

A fabric first approach has been taken for the One North Parade development, including fabric u-values that are better than the minimum required for compliance with Building Regulations. Table 3 below includes the fabric parameters included in the assessment:

	Fabric Parameters
External Wall	0.17 W/m ² K
Glazing	1.40 W/m ² K g-value 0.40
Roof	0.10 W/m ² K
Ground Floor	0.10 W/m ² K
Air permeability	3.00 m ³ /(h.m ²)@50Pa

Table 3. Fabric Parameters

4.2 System Parameters

Tables 4 to 9 include the system parameters that have been included in the assessments stated in this report.

	System Parameters - Offices
HVAC Type	ASHP with central balanced mixed mode ventilation including cooling
Heating Efficiency	4.50
Cooling Efficiency	6.50
Ventilation SFP	1.00 W/l/s
Heat Recovery Efficiency	85%

Table 4. System Parameters – Offices

	System Parameters – Reception/Security
HVAC Type	ASHP with central balanced mixed mode ventilation including cooling
Heating Efficiency	4.50

	System Parameters – Reception/Security
Cooling Efficiency	6.50
Ventilation SFP	1.00 W/l/s
Heat Recovery Efficiency	85%

Table 5. System Parameters – Reception / Security

	System Parameters – Restaurant
HVAC Type	ASHP with central balanced mixed mode ventilation including cooling
Heating Efficiency	4.50
Cooling Efficiency	6.50
Ventilation SFP	1.00 W/l/s
Heat Recovery Efficiency	85%

Table 6. System Parameters – Restaurant

	DHW Parameters – Throughout
DHW Heating Type	Central Heat Pump
Heating Efficiency	4.00

Table 7. DHW Parameters – Throughout

Lighting Parameters		
	Efficacy	Controls
Office	135 lm/W	PIRs & Daylight dimming
All other areas	120 lm/W	PIRs

Table 8. Lighting Strategy

	Mechanical Ventilation Strategy	Mode
Offices	12 l/s/p	Supply & Extract
Changing Room	20 ACH ⁻¹	Supply & Extract
Eating/Drinking Area	12 l/s/p	Supply & Extract
Food Preparation Area	15 l/s/p	Extract

Table 9. Mechanical Ventilation Strategy

5.0 Results

5.1 Manchester City Council Local Plan

The One North Parade proposed development meets the requirements outlined in the Manchester City Council Local Plan by achieving compliance with Part L (2021) of the Building Regulations. With the current Building Regulations (2021) requiring around a 30% reduction in carbon emissions compared to the previous Building Regulations (2013), the development surpasses the minimum 19% reduction over Part L (2013) as required by Ene 01.

Results in Table 10 below show One North Parade proposed development achieves compliance with Part L of the Building Regulations 2021, and therefore complies with the Manchester City Council Local plan.

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 Rate kWh/m ² /year	% Emission Rate Improvement over Part L Volume 2 2021	EPC Rating
3.30	2.80	36.01	30.69	14.7	A (8)

5.2 BREEAM Ene 01: Reduction in Energy Use and Carbon Emissions

The development is currently targeting nine no. Ene 01 Credits for an 'Outstanding' BREEAM rating, and for this to be achieved, it is likely that photovoltaic panels must be included in the design. Due to the development being at early design stage, this will be reviewed at a later stage, once the mechanical design has been completed.

Relative files have been sent to the BREEAM assessor to confirm credits achieved.

6.0 Summary

This report has been prepared to show the One North Parade development located in Manchester city centre, achieves compliance with BREEAM's *Ene 01: Reduction of energy use and carbon emissions*, and the Salford City Council Local Plan.

The proposed development will include open plan offices, a restaurant, bicycle storage, shower and changing facilities. Therefore, the development falls under Use Class E(g) (*Offices*) and E(b) (*Food and Drinks*) in accordance with the Town and Country Planning (Use Classes) Order 2020. For the purposes of the Approved Document Part L assessment within IES:VE, the building has been modelled under the 'B1 Offices' classification, as this remains the relevant category within the compliance software.

To achieve compliance with the energy targets, the following design features have been included, following the energy hierarchy approach:

- Enhanced fabric performance to reduce the initial energy demand
- High efficiency heat pump technology for space heating
- High efficiency LED lighting with PIR sensors throughout and daylight dimming in offices

Table 1 below summarises the results for these assessments, demonstrating the One North Parade proposed development achieves compliance with BREEAM Ene 01, and the Salford Council Local Plan. The development achieves six Ene 01 credits with the parameters stated within this report.

Results have been sent to the BREEAM assessor and the credits in stated in this report are subject to being approved by the assessor.

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 Rate kWh/m ² /year	% Emission Rate Improvement over Part L Volume 2 2021	Projected EPC Rating
3.30	2.80	36.01	30.69	14.7	A (8)

Table 1. Results Summary

7.0 Appendix 1 – BRUKL & EPC

BRUKL Output Document



HM Government

Compliance with England Building Regulations Part L 2021

Project name

One North Parade

As designed

Date: Thu Mar 20 16:19:10 2025

Administrative information

Building Details

Address: Parsonage Gardens, Manchester, M3 2NH

Certifier details

Name: CWC

Telephone number: Phone

Address: Bloc, 17 Marble Street, Manchester, M2 3AW

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.28

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.28

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

Foundation area [m²]: 571.65

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	3.3
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	2.8
Target primary energy rate (TPER), kWh _{eq} /m ² .annum	36.01
Building primary energy rate (BPER), kWh _{eq} /m ² .annum	30.69
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	0.17	0.17	00000000:Surf[3]
Floors	0.18	0.1	0.1	00000000:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.1	0.1	00000149:Surf[0]
Windows** and roof windows	1.6	1.4	1.4	00000000:Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	-	-	No personnel doors in building
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -Calc = Calculated maximum individual element 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	3

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters			Building Use	
	Actual	Notional	% Area	Building Type
Floor area [m ²]	10170.6	10170.6		Retail/Financial and Professional Services
External area [m ²]	7967.6	7967.6	6	Restaurants and Cafes/Drinking Establishments/Takeaways
Weather	MAN	MAN	94	Offices and Workshop Businesses
Infiltration [m ³ /hm ² @ 50Pa]	3	3		General Industrial and Special Industrial Groups
Average conductance [W/K]	4323.73	4165.68		Storage or Distribution
Average U-value [W/m ² K]	0.54	0.52		Hotels
Alpha value* [%]	25.34	10		Residential Institutions: Hospitals and Care Homes
* Percentage of the building's average heat transfer coefficient which is due to thermal bridging				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	2.5	2.61
Cooling	5.1	3.98
Auxiliary	1.97	1.9
Lighting	6.1	8.99
Hot water	5.2	7.08
Equipment*	45.62	45.62
TOTAL**	20.88	24.56

* 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	0.13
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>0</i>	<i>0.13</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	121.26	90.76
Primary energy [kWh _{PE} /m ²]	30.69	36.01
Total emissions [kg/m ²]	2.8	3.3

Energy Performance Certificate
Non-Domestic Building



Parsonage Gardens
Manchester
M3 2NH

Certificate Reference Number:
4311-0355-9411-9467-6998

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



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 (m²): 10170.596
Building complexity: Level 5
Building emission rate (kgCO₂/m² per year): 2.79
Primary energy use (kWh_{pe}/m² per year): 30.67

Benchmarks

Buildings similar to this one could have ratings as follows:



If newly built



If typical of the existing stock