105 - 111 Egerton Road, Manchester

Energy Statement

August 26

PREPARED FOR

PAUL BUTLER AND STANTON PROPERTIES



Energy Statement

Prepared By	Diya Kulkarni
Reviewed By	-
Report Reference	Energy Statement for development at 105 - 111 Egerton Road, Manchester
Issuing Company	Civic MEP Limited

Revisions			
Date	**Rev**	**Reason**	**Name**
23/07/2026	Rev 01	For Comment	DK
18/08/2026	Rev 02	Revised Issue	DK

This report is the copyright of the issuing Civic group company and is intended solely for the use of the individual or organisation to whom it is addressed. It may not be disclosed, reproduced, or referred to in whole or in part by any other party without the prior written consent of the relevant Civic group company. No liability is accepted by any Civic group company for any loss or damage arising from any unauthorised use of this report.

“Civic” is a trading name used by companies within the Civic Plus Limited group (registered number: 14208271), including Civic Engineers Limited (registered number 06824088), Civic Plus Limited (registered number: 752376), Civic Earth Limited (registered number 14897633), Civic Heritage Limited (registered number 15913145), Civic MEP Limited (registered number 09245443), Civic Rail Limited (registered number 15913179) and New Practice Limited (registered number SC623648). All are private limited companies registered in England at Carvers Warehouse, 77 Dale Street, Manchester M1 2HB. Except for Civic Plus Limited (registered number: 752376), which is registered in the Republic of Ireland at 36 Lad Lane, Baggot Street Lower, Dublin D02 T208 and New Practice Limited, which is registered in Scotland at 35 Virginia Street, Glasgow, G1 1TN.

© Civic 2026

CONTENTS

CONTENTS 2
Executive Summary 3
1. Introduction 1
1.1. The Site and Proposed Development 1
2. Relevant Policies and Guidance 2
2.1. National Policies 2
2.2. National Climate and Energy Policy 3
2.3. Regional Level Policies- Greater Manchester Combined Authority (GMCA) 4
2.4. Places for Everyone Joint Development Plan (Adopted March 2024) 5
2.5. Local Level Policies- Manchester City Council 7
2.6. Manchester Climate Change Framework 2020-25 9
2.7. Manchester Affordable Housing and Net Zero Policies 10
2.8. Summary of Policies and Benchmarks for The Development 11
3. Sustainable Design Strategy 13
3.1. Energy Hierarchy 13
4. Low and Zero Carbon Technology Assessment 15
5. Carbon Reductions Outcomes 17
5.1. Be Lean, Be Clean and Be Green 17
6. Other Sustainability Considerations 19
7. Conclusion 21

Appendices

A. Carbon calculation derived from SAP assessment
B. All relevant SAP compliance outputs and DER/TER documents

Executive Summary

This Energy Statement has been prepared by CIVIC MEP on behalf of Paul Butler Architects and Stanton Properties (hereafter referred to as 'The Applicant') to support a planning application for the refurbishment and extension of the residential development at 105 - 111 Egerton Road, Manchester hereafter referred to as 'the site'.

The proposals comprise the refurbishment and remodelling of the existing building, together with a minor three-storey rear extension, increasing the residential accommodation from **12 existing apartments to 14 apartments** (comprising 9 one-bedroom and 5 two-bedroom dwellings). The development has been designed to improve the energy performance of the retained building whilst incorporating sustainable design principles and low-carbon technologies where practical.

The statement specifically addresses policies from The National Planning Policy Framework (NPPF) 2024, in addition to policies set out in The Planning & Energy Act (2008), Building Regulations Part L (2022), Places for Everyone joint development plan, as well as all application regional and local policies for Greater Manchester/ Manchester. Relevant policies will be outlined in section 2.

The statement details how the development will incorporate sustainable design and resource efficiency in line with the Energy Hierarchy, to meet the policy requirements and council targets whilst reducing its overall environmental impact.

In relation to the planning documents and policies outlined above, the development achieves a **36.9%** reduction in CO2 emissions over the Part L Building Regulations baseline.

Following the LZC feasibility assessment, it is in the aspirations of the applicant that the site will not include any gas, instead to achieve this, the development incorporates:

- A fabric-first approach with enhanced insulation
- Improved Air tightness to worst performing flats to reduce heat loss
- Low Energy Lighting
- All electric design – no gas
- High-efficiency electric panel heaters for space heating.
- Air Source Heat Pump hot water systems as the primary low-carbon heat source.

This statement also examines how the design, specification and characteristics of the proposal will contribute to sustainability and meet the relevant objectives outlined within the relevant policies. The sustainability measures assessed included:

- Flood Risk Zone
- Internal Water Efficiency
- Waste Management
- Materials
- Pollution Control

Overall, the proposed refurbishment works at the development demonstrates compliance with the relevant national, regional and local planning policies, achieving a **36.9% reduction in regulated CO_2 emissions** over the Building Regulations baseline whilst incorporating sustainable design principles and low-carbon technologies appropriate to the refurbishment and extension of the existing building.

1. Introduction

The following Energy Statement has been prepared by CIVIC MEP on behalf of Paul Butler and Stanton Properties to support a planning application for the residential development at 105 - 111 Egerton Road, Manchester.

1.1. The Site and Proposed Development

The proposed development site is located at 105–111 Egerton Road, Manchester, M14, within the administrative boundary of Manchester City Council.

The site occupies a sustainable urban location within a well-established residential area of Manchester. It benefits from excellent accessibility to local amenities, public transport, educational facilities and employment opportunities, encouraging sustainable patterns of travel and reducing reliance on the private car. The site represents an opportunity to improve an existing residential building whilst making efficient use of previously developed land.

The surrounding area is predominantly residential in character, comprising a mixture of traditional terraced housing, apartments and local community facilities. The proposals have been designed to complement the existing streetscape whilst improving the quality and energy performance of the retained building.

The proposal comprises the refurbishment and remodelling of the existing residential building together with a three-storey rear extension, increasing the residential accommodation from 12 existing apartments to 14 apartments, comprising 9 one-bedroom and 5 two-bedroom dwellings. The development includes associated landscaping, refuse and recycling facilities, cycle parking and all associated external works.

The development has been designed following a fabric-first approach, incorporating enhanced thermal insulation, improved airtightness, high-performance glazing and efficient building services to reduce energy demand. Low-carbon technologies, including air source heat pump hot water units, have been incorporated to minimise operational carbon emissions and improve the overall environmental performance of the development.

Overall, the proposal delivers a high-quality refurbishment and extension that makes effective use of an existing residential site, improves the energy performance of the building, and supports the sustainability objectives of Manchester City Council through the delivery of energy-efficient homes within a highly accessible location.



Figure 1- Proposed Site Boundary Plan

2. Relevant Policies and Guidance

2.1. National Policies

2.1.1. Building Regulations Part L (2022)- Conservation of Fuel & Power

This national level regulation sets the mandatory minimum energy performance standards for all new buildings in England. The regulations establish Target Emissions Rates (TER) that developments must not exceed, calculated using the Building Emissions Rate Methodology. Key requirements include improved fabric performance standards with improved U-values for walls, roofs, floors and windows alongside higher system efficiency required for heating, cooling and lighting.

The 2022 update introduced a 31% reduction in carbon emissions compared to 2013 standards, with a focus on fabric first approaches and reduced thermal bridges. All major developments must demonstrate Part L, through SAP (residential).

The applicant aspires to achieve this reduction through the fabric-first design, enhanced insulation and air tightness, whilst installing efficient systems across the site.

2.1.2. National Planning Policy Framework (NPPF) 2024

The NPPF (December 2024) sets out the Government's planning policies for England and how these are expected to be applied. The overall emphasis of the NPPF is to reiterate the Government's key objectives, including securing sustainable development and to support the transition to a low-carbon future, in line with the UK's Statutory commitment to achieve net zero greenhouse emissions by 2050. The NPPF requires new development to minimise energy use, integrate low and zero-carbon technologies, and contribute to climate change mitigation and adaptation.

The applicant endeavours to utilise completely electric systems, mitigating the use of gas across the site.

2.1.3. Planning Practice Guidance (PPG)- Climate Change and Energy

The PPG sets out how planning can support climate change mitigation and adaptation. It allows local planning authorities to set energy standards above Building Regulations were justified and highlights the importance of both operational and embodied carbon. It covers renewable and low carbon measures, appropriate assessment methods, cumulative impacts and community benefits. For major schemes, it recommends following the 'Energy Hierarchy' to reduce demand, improve efficiency, and use renewable sources. It also addresses resilience, including overheating, flood risk and SuDS.

Consideration will be given throughout the design process to the energy hierarchy alongside overheating, flood risk, and SuDS.

2.1.4. Future Homes Standard (Implementation Pending)

The Future Homes Standard represents the next step in the building energy performance, targeting 75-80% reduction in carbon emissions compared to the current standards (anticipated 2025-26). This standard will mandate low carbon heating systems, effectively ending the installation of gas boilers in new homes. New homes will be designed to be 'zero carbon ready', meaning they can achieve net zero emissions through renewable electricity supply once the grid is fully decarbonised. Developers are expected to prepare for these enhancements through design strategies that can accommodate future upgrades.

The development is consistent with the principles of the Future Homes Standard through the adoption of an all-electric, fabric-first design.

2.2. National Climate and Energy Policy

National climate and energy policies provide the overarching framework for carbon reduction and energy transition across all sectors. These policies establish long-term targets and strategic direction that inform local implementation and ensure consistency with national decarbonisation objectives.

Policy	*Key Requirements / Details*	*How the Development Meets This Policy*
Climate Change Action 2008	*This legal framework states that Development must contribute to national net zero by 2050 target, support statutory carbon budgets, and demonstrate long-term carbon reduction trajectory.*	*The scheme adopts an all-electric design, removing reliance on fossil fuels and supporting the national Net Zero 2050 target. Use of a high-efficiency Air Source Heat Pump (ASHP HW unit) significantly reduces operational carbon emissions, demonstrating a clear long-term decarbonisation pathway.*
Net Zero Strategy 2021	*Requirements include building decarbonisation measures, renewable energy deployment, energy efficiency improvements, and transition to low carbon heating systems.*	*The design delivers enhanced fabric performance with improved U-values that minimise energy demand of the existing structure. The inclusion of ASHP HW technologies provides low-carbon heating, promoting renewable energy use and improving overall energy efficiency in line with policy requirements.* *Total savings on residual emissions is calculated at **36.9%.***

Table 1- National Climate and Energy Policies

2.3. Regional Level Policies- Greater Manchester Combined Authority (GMCA)

Regional policies for Greater Manchester provide an enhanced framework that builds upon national requirements to deliver the area's ambitious carbon neutral target by 2038. These policies coordinate action across the city-region and establish specific requirements for energy infrastructure, affordable housing, and local energy systems that go beyond national minimum standards.

Policy	Description	Key Requirements / Details	*How the Development Meets This Policy*
Greater Manchester 5 Year Environmental Plan	*Regional Environmental strategy and carbon targets*	*Development must contribute to carbon neutrality by 2030 and 50% reduction in emissions by 2030 through enhanced building energy efficiency and renewable energy deployment*	*The development adopts a fabric-first approach incorporating enhanced insulation, improved airtightness and high-performance glazing to minimise energy demand. Low-carbon air source heat pump hot water units further reduce operational emissions. SAP modelling demonstrates a 36.9% reduction in regulated CO2 emissions compared with the Part L Building Regulations baseline, supporting Greater Manchester's decarbonisation objectives.*
Greater Manchester Local Energy Market (GM LEM)	*Framework for local energy systems and trading*	*Development should support local energy generation, enable energy storage systems facilitate community energy projects, and integrate with smart energy networks.*	*The proposed refurbishment is an all-electric scheme incorporating efficient electric heating and air source heat pump hot water units, removing reliance on fossil fuel heating. The all-electric design is compatible with future smart grid technologies and supports the transition to a more flexible, low-carbon local energy network. The fabric-first design also reduces overall energy demand, with SAP modelling demonstrating a 36.9% reduction in regulated CO2 emissions over the Part L baseline.*

Table 2- Greater Manchester Policies

2.4. Places for Everyone Joint Development Plan (Adopted March 2024)

Places for Everyone is a long-term plan of nine Greater Manchester districts (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford and Wigan) for jobs, new homes, and sustainable growth. It has been published by the GMCA on behalf of the nine districts.

The plan is a joint development plan of the nine districts which will determine the kind of development that takes place in their boroughs, maximising the use of brownfield land and urban spaces while protecting Green Belt land from the risk of unplanned development.

The proposed development at 105–111 Egerton Road, Manchester comprises the refurbishment and extension of an existing residential building and is therefore not classified as a new-build development. Whilst assessed under the Building Regulations Part L1B methodology, the design has been developed with full regard to the objectives of the Places for Everyone Joint Development Plan. Where applicable, the proposals have adopted the principles of the framework through a fabric-first approach, low-carbon building services and sustainable design measures, achieving a 36.9% reduction in regulated CO2 emissions compared with the Part L Building Regulations baseline.

Policy	Description	Key Requirements / Details	*How the Development Meets This Policy*
JP-S 2: Carbon and Energy	*Strategic policy on carbon reduction and energy efficiency*	*All developments must be carbon neutral by 2038, exceeding Building Regulations energy performance standards, maximise renewable energy generation, connect to heat networks where viable, and demonstrate whole-life carbon assessment*	*The proposed refurbishment and extension adopts the Be Lean, Be Clean, Be Green energy hierarchy by prioritising reductions in energy demand through a fabric-first approach. The retained building fabric has been upgraded where practicable, with improved insulation, enhanced glazing and reduced air leakage, whilst the new extension exceeds the minimum thermal performance standards required under Approved Document Part L.* *Space heating is provided via efficient electric heating, with air source heat pump hot water units supplying domestic hot water, eliminating the need for gas. SAP modelling demonstrates a 36.9% reduction in regulated CO2 emissions compared with the Part L Building Regulations baseline, exceeding current Building Regulations performance and supporting the objectives of JP-S2.* *Whilst a heat network is not currently available and on-site renewable electricity generation is not proposed as part of this refurbishment; the development delivers a significant reduction in operational carbon through improvements to the building fabric and low-carbon building services.*
JP-S 3: Heat and Energy Networks	*District heating and energy infrastructure policy*	*Development must connect to existing heat networks where available, enable future connection to planned networks, provide infrastructure for heat network development and support community heating schemes*	*he site has been reviewed against Greater Manchester's heat network opportunities and is not located within an existing operational district heat network. Given the scale and nature of this refurbishment and extension, connection to a heat network is not currently feasible. Instead, the development utilises all-electric, low-carbon heating technologies, including air source heat pump hot water units, reducing reliance on fossil fuels whilst remaining compatible with future decarbonisation of the electricity grid.* *Should a district heat network become available in the future, the development could be reviewed for connection where technically and economically viable.*

JP-P-1: Sustainable Places	*Sustainable development policy*	*Requirements include integrating climate resilience measures, demonstrating sustainable design principles, supporting low carbon transport, and enhancing biodiversity and green infrastructure.*	*The proposal delivers the refurbishment of an existing residential building together with a modest rear extension, making efficient use of previously developed land within a sustainable urban location. The development significantly improves the energy performance of the existing building through enhanced thermal insulation, improved glazing and efficient all-electric building services, extending the useful life of the retained structure whilst reducing operational energy demand. The scheme also provides secure cycle parking, refuse and recycling facilities and landscaping improvements, encouraging sustainable travel and enhancing the quality of the site. Overall, the development supports the principles of sustainable regeneration by improving existing housing stock whilst delivering a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline.*

Table 3 – Places for Everyone Policies

2.5. Local Level Policies- Manchester City Council

Local policies from Manchester City Council provide the most detailed and site-specific requirements for energy sustainability in residential development. These policies reflect Manchester's position as a climate leadership city and establish enhanced performance standards that support the delivery of the city's zero carbon ambitions by 2038.

Policy	Description	Key Requirements / Details	*How the Development Meets This Policy*
Core Strategy Policy DM 1: Development Management	*Outlines several development principles, developments should adhere to*	*Stipulates that all new development should have regard for several development principles relevant to sustainability, including waste management, designing for health, flood risk, green infrastructure, biodiversity. Additionally, subject to scheme viability, developers will be required to demonstrate that new non-domestic development will achieve a BREEAM Rating of 'Very Good' or for domestic development to achieve the Code for Sustainable Homes standard.*	*The proposal delivers the refurbishment and extension of an existing residential building, making efficient use of previously developed land within a sustainable urban location. The scheme enhances the quality and energy performance of the existing building whilst providing improved accommodation, secure cycle parking, refuse and recycling facilities and appropriate landscaping. The site benefits from excellent access to public transport and local amenities, supporting the sustainable development principles set out within Policy DM1.*
Core Strategy Policy EN 4: Reducing CO_2 Emissions	*Strategic policy for carbon reductions in development*	*Reducing CO2 Emissions: This policy targets the reducing of CO2 emissions through the following of the energy hierarchy; firstly, reducing the need for energy through efficient design measures, followed by clean energy and lastly, the application of renewable or LZC technologies. In addition to this point, MCC state within this policy all new development is required to use building materials that have low embodied carbon.*	*The development follows Manchester's energy hierarchy by first reducing energy demand through a fabric-first approach, incorporating enhanced insulation, improved glazing and improved airtightness to both the retained building and new extension. Efficient all-electric heating together with air source heat pump hot water units further reduce operational carbon emissions. SAP modelling demonstrates a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline.* *Wherever practicable, the refurbishment also retains the existing building structure, reducing embodied carbon associated with demolition and new construction.*
Core Strategy Policy EN 6: Target Framework for CO_2 reductions	*Specific targets and implementation framework*	*Developments must achieve 31% reduction in CO2 from baseline 2013 standards, support progressive targets towards zero carbon, contribute to city-wide carbon budget, and include monitoring and reporting of energy performance.*	*Although assessed under the Part L1B methodology for refurbishment and extension works, the development significantly exceeds the minimum Building Regulations requirements through enhanced fabric performance and low-carbon building services. SAP modelling demonstrates a 36.9% reduction in regulated CO2 emissions compared with the Part L Building Regulations baseline, supporting the objectives of Policy EN6 and Manchester's wider transition towards a low-carbon built environment.*

Core Strategy EN8: Adaptation to Climate Change	*Ensuring the development is adaptable*	*Developments must ensure resilience to overheating, water stress and energy supply risks.*	*The refurbishment improves the thermal performance of the existing building, increasing resilience to future climatic conditions through enhanced insulation and upgraded glazing. The improved building fabric helps regulate internal temperatures, reducing energy demand for heating whilst contributing to occupant comfort throughout the year.*
Core Strategy Policy EN9-Green Infrastructure	*Incorporating Green Infrastructure into developments*	*Requires new developments to maintain existing green infrastructure whilst using every opportunity, in accordance with current Green Infrastructure Strategies, to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between area of green infrastructure.*	*The proposal includes associated landscaping and external improvements that enhance the appearance of the site whilst maintaining opportunities for soft landscaping where appropriate. As a refurbishment and extension to an existing residential site, the development makes efficient use of previously developed land without unnecessary loss of existing green infrastructure.*
Core Strategy Policy EN14-Flood Risk	*Flood Risk*	*This policy expects all new developments to minimise surface water run-off through the use of SUDs and Green Infrastructure.*	*The site is located within Flood Zone 3, where flood risk is considered high. A site-specific Flood Risk Assessment (FRA) is recommended to demonstrate that the proposed refurbishment and extension can be safely accommodated and will not increase flood risk elsewhere. Appropriate drainage and flood mitigation measures should be incorporated in accordance with national and local planning policy.*
Core Strategy Policy T 1	*Ensuring Sustainable Transport is available for developments*	*Policy aims to deliver sustainable, high quality, integrated transport systems to encourage a shift away from car travel to public transport, cycling and walking.*	*The site occupies a sustainable location with excellent access to public transport, local services and employment opportunities, encouraging walking, cycling and the use of public transport. Secure cycle parking is provided as part of the development, reducing reliance on private vehicles and supporting the sustainable transport objectives of Policy T1.*

Table 4 – Manchester Core Strategies

2.6. Manchester Climate Change Framework 2020-25

Manchester's Climate Change Framework establishes the city commitment to carbon neutrality and provides specific targets and actions area that new development must support. This framework translates Greater Manchester's regional ambitions into local delivery mechanisms and accountability structures.

Policy	Description	Key Requirements / Details	*How the Development Meets This Policy*
Zero Carbon City 2038	*Manchester's commitment to carbon neutrality*	*All new development must support the zero-carbon target, demonstrate net positive energy contributions where possible, integrate with city-wide carbon monitoring systems, and support community energy initiatives.*	*The proposed refurbishment and extension supports Manchester's ambition to become a Zero Carbon City by 2038 by significantly improving the energy performance of an existing residential building. The scheme follows a fabric-first approach, enhancing the thermal performance of the retained building and new extension through improved insulation, upgraded glazing and increased airtightness. Efficient all-electric heating and air source heat pump hot water units further reduce operational carbon emissions. Although assessed under the Part L1B methodology, SAP modelling demonstrates a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline. By retaining and upgrading the existing building, the proposal also avoids a significant proportion of the embodied carbon that would be associated with demolition and complete redevelopment, supporting Manchester's long-term decarbonisation objectives.*
Carbon Budget Framework	*City-wide carbon accountability*	*Development must contribute appropriately to the city carbon budget of 15.9MtCO_2 remaining, include annual carbon reporting mechanisms, support science-based targets, and enable carbon offset strategies where necessary.*	*The development contributes positively towards Manchester's Carbon Budget Framework by delivering substantial improvements to the energy performance of the existing building and reducing regulated operational carbon emissions. Through enhanced building fabric and efficient low-carbon building services, SAP modelling demonstrates a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline. As a refurbishment-led development, the retention and reuse of the existing building fabric also reduce the embodied carbon associated with new construction, supporting the city's objective of reducing whole-life carbon emissions while making efficient use of existing resources.*

Table 5 –Manchester Climate Change Framework

2.7. Manchester Affordable Housing and Net Zero Policies

This section addresses the specific policy requirements for affordable housing within the development, particularly the enhanced energy performance standards. These policies ensure that affordable housing residents benefit from low energy costs and high-quality, energy-efficient homes.

Policy	Description	Key Requirements / Details	*How the Development Meets This Policy*
Manchester Housing Strategy (Linked to Net Zero 2038)	*Manchester's approach to housing delivery aligned with carbon targets*	*All new housing should be aligned to support net zero by 2038 through enhanced sustainability standards for affordable housing, integration with city-wide carbon budget, and affordable housing exceeding minimum energy standards.*	*The Manchester Housing Strategy 2022–2032 and the city's Net Zero 2038 ambition provide a strategic framework for delivering high-quality, energy-efficient homes and reducing carbon emissions across Manchester's housing stock. Whilst the proposed refurbishment and extension do not include affordable housing and is therefore not subject to the enhanced sustainability requirements associated with affordable housing delivery, the scheme has been designed in accordance with the wider objectives of the strategy. Through a fabric-first approach, improvements to the thermal performance of the retained building, and the use of efficient all-electric building services including air source heat pump hot water units, the development achieves a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline. By retaining and upgrading the existing building, the proposal also supports the sustainable reuse of existing housing stock, contributing towards Manchester's long-term net zero ambitions.*

Table 6 – Manchester's Affordable Housing and Net Zero Policies

2.8. Summary of Policies and Benchmarks for The Development

The development has been assessed against national and local planning policies, as well as Building Regulations and Manchester's zero carbon targets. A summary can be seen below:

Policy/ Standard	Requirement	Compliant	*Evidence*
Part L 2021	*At least 31% CO_2 Reduction vs. Part L 2013*	*Y*	*SAP assessments demonstrate compliance with Part L1B and achieve a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline. Refer to Appendix 1.*
Future Homes Standard (2025)	*Pathway to 75-80% CO_2 reduction vs 2013 baseline*	*Y*	*Although the development is assessed under Part L1B rather than the Future Homes Standard, the proposed fabric improvements and low-carbon all-electric building services align with the direction of future regulations.*
Approved Document O (2022)	*Overheating mitigation demonstrated*	*N/A*	*As this is a refurbishment and extension assessed under Part L1B, Approved Document O is not applicable. Nevertheless, the proposal incorporates appropriate glazing and ventilation strategies to provide suitable occupant comfort.*
Water Efficiency	*Maximum 110 litres/person/day*	*Y*	*Yes, refer Section 6.1.3 below*
Core Strategy EN6	*Contributes to Manchester's 2038 net zero target*	*Y*	*Yes, as outlined above. This development complies by adopting efficient building fabric, optimised thermal performance, and renewable heating technology.*
Core Strategy EN4	*On-site renewable/ low-carbon energy included*	*Y*	*Yes, installation of an ASHP HW unit demonstrates compliance*
Core Strategy EN8	*Climate resilience measures included (heating, water & energy)*	*Y*	*All were targeted in a feasibility assessment, and best strategies were incorporated.*
GMCA carbon target	*>19% CO_2 Reduction beyond Part L 2013*	*Y*	*The refurbishment and extension achieve a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline, supporting Greater Manchester's carbon reduction objectives.*
On-site Renewables	*10-15% energy demand met on-site*	*Y*	*Owing to the refurbishment nature of the development and site constraints, on-site*

			renewable generation is not proposed. Carbon reductions are instead achieved through a fabric-first approach and efficient low-carbon building services.
Heating Systems	*No gas boilers- low-carbon heat specified.*	*Y*	*The development adopts an all-electric strategy using air source heat pump hot water units together with electric space heating. No gas boilers are proposed.*

Table 7– Summary of Policies and Benchmarks for The Development

3. Sustainable Design Strategy

This section considers the requirements for the design with regards to energy and carbon emissions and the potential impacts from utilising renewable energy sources.

3.1. Energy Hierarchy

In response to the policy requirements and climate change plan targets set out in **Section 2**, new developments should aim to assist and achieve the following carbon reduction targets:

- 15% renewable energy contribution
- 31% reduction over Part L 2013

Whilst the development is not classified as a new-build and is assessed under the refurbishment and extension methodology, the design has been developed with due regard to Manchester's wider sustainability and net zero objectives.

The design has been informed by the recognised energy hierarchy to ensure a fabric-first, energy-efficient and low-carbon solution, as outlined below::

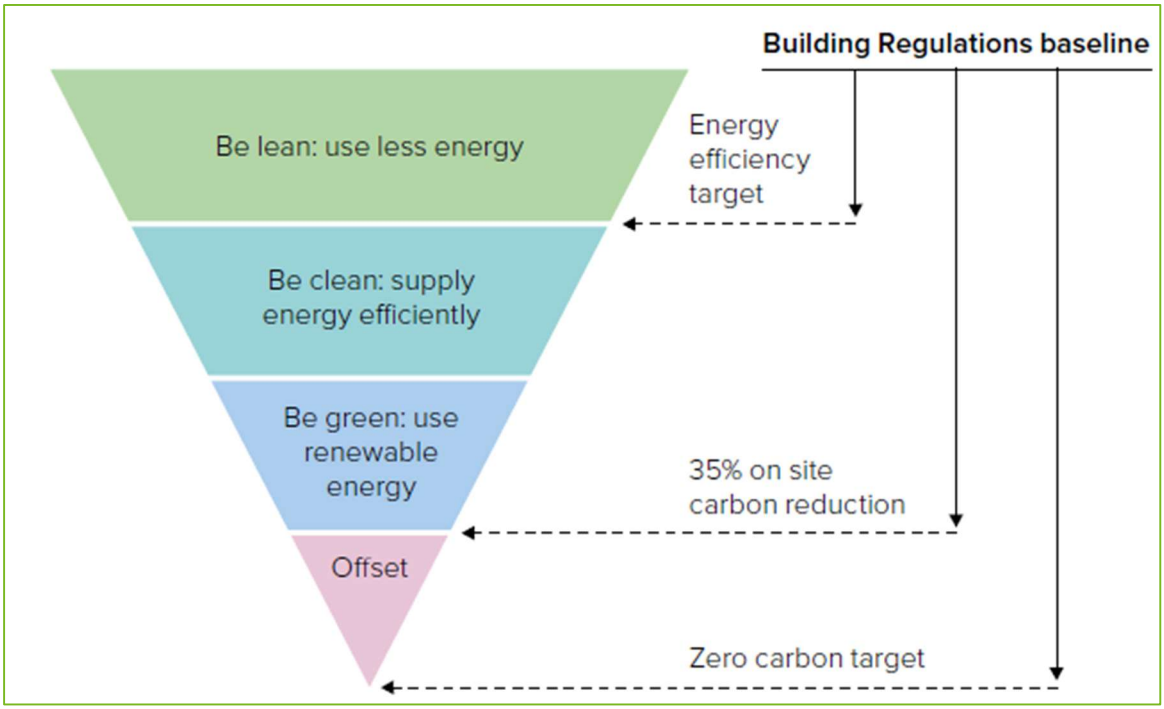


Figure 2- Energy Hierarchy

3.1.1. Be Lean- Minimise Energy Demand

The development will include the implementation of passive design measures and optimise the building envelope in terms of orientation, air tightness, and insulation.

The proposal is utilising the fabric first methodology; therefore, the properties will incorporate well-insulated envelopes, clever thermal bridging details to minimise loss through the envelope and reduce energy consumption.

For example, the proposal is targeting a low carbon classification through a holistic low energy design concept as it will be designed with a fabric first approach whereby good standards are aspired to for all fabric U-values and air permeability targets, whilst consideration is also given to building orientations, solar shading devices and natural means of ventilation.

Fabric Element	Proposed Value (W/m²K)	Part L 2021 Notional (W/m²K)	Improvement (%)
Walls	**0.25**	**0.30**	**16.67%**
Roofs	**0.16**	**0.16**	**0.00%**
Windows	**1.30**	**1.40**	**7.14%**
Floors	**0.18**	**0.25**	**28.00%**
Air Permeability (m³/m²/hr)	**8.00**	**15.00**	**46.67%**

Table 8- Fabric Performance of Residential Properties.

3.1.2. Be Clean- Meeting Demand Efficiently

Specification of energy efficient heating, ventilation, lighting, and system controls to facilitate efficient operation. Particular attention is being paid to the wellbeing of occupants. The ventilation strategy has been developed to minimise noise ingress from the proposed location as far as possible while minimising the risk of overheating.

The development will look to utilise air source heat pumps to the houses for hot water heating

The whole development will not incorporate any gas, in line with the policies outlined above.

3.1.3. Be Green- Use Renewable Energy

Opportunities for incorporating low and zero carbon technologies (LZCT) have been considered for this development. The viability of several separate technologies was examined in a LZCT study (see section 4).

Photovoltaic panels were considered as part of the Low and Zero Carbon Technology assessment. However, given the refurbishment nature of the development and the selected all-electric strategy incorporating air source heat pump hot water units, PV has not been proposed as part of this application

4. Low and Zero Carbon Technology Assessment

4.1.1. Solar Hot Water (Thermal)

Solar water heating systems are one of the more familiar renewable technologies used at the moment. They use the energy from the sun to heat water, most commonly for hot water needs. Solar heating systems use a heat collector that is usually mounted on a roof in which the sun heats a fluid. This fluid is used to heat water that is stored in either a separate hot water cylinder or in a twin-coil hot water cylinder (the second coil is used to provide additional heating from a boiler or other heat source).

Solar hot water panels could be used; however, ASHP HW will provide slightly better savings when compared.

Renewable Technology Not Chosen.

4.1.2. Photovoltaic Panels (PV)

Photovoltaic modules convert sunlight directly to DC electricity. The solar cells consist of a thin piece of semiconductor material, in most cases of silicon. Through a process called doping, very small amounts of impurities are added to the semiconductor, which creates two different layers called n-type and p-type layers.

Certain wavelengths of light are able to ionize the silicon atoms, which separates some of the positive charges (holes) from the negative charges (electrons). The holes move into the positive or p-layer and the electrons into the negative or n-layer. These opposite charges are attracted to each other, but most of them can only re-combine by the electrons passing through an external circuit, due to an internal potential energy barrier. This flow of electrons produces a DC current.

Renewable Technology Not Chosen.

4.1.3. Ground Source Heat Pumps (GSHP)

A heat pump is a device that takes up heat at a certain temperature and releases it at a higher temperature. The essential components of a heat pump are heat exchangers (through which energy is extracted and emitted) and a means of pumping heat between the exchangers. The effectiveness of the heat pump is measured by the ratio of the heating capacity to the effective power input, usually known as the coefficient of performance (COP). Ground-source heat pumps (GSHP) extract heat from the ground. They are classified as either water-to-air or water-to-water units depending on whether the heat distribution system in the building uses air or water. Ground source heat pumps either use long shallow trenches or deep vertical boreholes to take low grade heat from the ground and then compress it to create higher temperatures.

Ground source heat pumps have not been utilised at this stage, due to the considerable saving from other chosen renewables.

Renewable Technology Not Chosen

4.1.4. Air Source Heat Pumps (ASHP)

ASHPs absorb heat from the outside air to provide space heating and hot water, operating efficiently year-round and down to -20 °C. They supply hot water at around 55 °C without immersion heaters and work best with underfloor heating or larger radiators designed for low-temperature systems. Air Source Heat Pump Hot Water systems (ASHPHWs) operate on the same principle but are dedicated to domestic hot water. Operating efficiently year-round, they deliver water at around 55 °C without the need for immersion heaters, ensuring a reliable hot water supply for baths, showers, and daily household use. Compact and self-contained with an integrated cylinder, ASHPHW units are well suited to apartments or homes with limited space. They are typically installed in a ventilated cupboard, utility room, or plant area.

For this project, all **dwellings will be equipped with ASHPHW units for hot water only**.

Chosen Renewable Technology

4.1.5. Biomass Heating

Biomass is any plant-derived organic material that renews itself over a short period.

Biomass energy systems are based on either the direct or indirect combustion of fuels derived from those plant sources. The most common form of biomass is the direct combustion of wood in treated or untreated forms. The use of biomass is becoming increasingly common in some European countries.

The environmental benefits relate to the significantly lower amounts of energy used in biomass production and processing compared to the energy released when they are burnt. This can range from a four-fold return for biodiesel to an approximate 20-fold energy return for woody biomass. Biomass-fuels can be used to produce energy on a continuous basis (unlike renewables such as wind or solar energy) and it can be an economic alternative to fossil fuels as it is a potential source of both heat and electricity.

However, Biomass systems have particular design management and maintenance requirements associated with sourcing, transportation and storage and are therefore more commonly used in commercial developments rather than domestic installations. It can be less convenient to operate than mains-supplied fuels such as natural gas and are more management intensive and require expertise in facilities management. Sources of biomass can also fluctuate, so boilers should be specified to operate on a variety of fuels without risk of overheating or tripping out.

A communal biomass system would not be feasible for this development due to the expense associated with the necessary output to heat all dwellings on the site.

Renewable Technology Not Chosen

4.1.6. Wind

Wind turbines convert the kinetic energy in wind into mechanical energy that is then converted to electricity. Turbines are available in a range of sizes and designs and can either be free-standing, mounted on a building or integrated into a building structure.

The wind speed in the area is under the advised minimum, and the built-up area means that a wind turbine wouldn’t be feasible.

Renewable Technology Not Viable

4.1.7. District Heat Networks

District heating networks operate by distributing heat from a centralised energy source to multiple buildings through a network of insulated underground pipes. This approach can offer substantial carbon savings and efficiency benefits where there is sufficient heat density and connection potential to nearby developments. However, no existing or planned district heat network infrastructure currently extends to the area, and the development is a standalone residential block with limited adjacent high-demand buildings.

Establishing a new, dedicated network solely for this site would therefore be economically and technically unfeasible, with high capital costs and minimal carbon benefit relative to demand.

Consequently, the use of a district heating connection is not considered a viable renewable or low-carbon option for this development.

Renewable Technology Not Viable

5. Carbon Reductions Outcomes

5.1. Be Lean, Be Clean and Be Green

All reasonable technologies were investigated for their suitability to the site and development; please refer to section 3 for details.

In addition to energy efficiency measures, it is proposed that the development will feature the following Low/Zero carbon Technologies:

- ASHPHW to all dwellings

CO2 Saving from onsite LZC Technologies = **3,049.95 kgCO2/Yr**

5.1.1. Energy and CO_2 Reduction Summary

A summary of all stages of the energy demand assessment from baseline figures to final carbon reduction are shown in Tables 9 and 10 below:

Summary of CO2 Emission Reductions	Total CO2 emissions (kgCO2/year)
Carbon Factors (Gas / Electric)	0.210 / 0.136
Baseline emissions	8,265.79
Be Lean – improved fabric performance, prior to application of the proposed low-carbon heating strategy (No PV)	12,862.05
Be Green – final proposed strategy incorporating ASHP hot water systems	5,215.84
% CO2 displaced in total	36.9%

Table 9 – Summary of Energy Demand Reductions

		Energy Demand (kWh/y)	Energy saving achieved (%)	Regulated CO_2 emissions (kg/yr)	Saving achieved on residual CO2 emissions (%)
BASELINE	Building Regulations Part L compliance ("Baseline" energy demand & emissions)	36,500.71		8,265.79	
BE LEAN	Proposed scheme after CHP savings	75,278.90	-106.2%	12,862.05	-55.6%
BE CLEAN/ GREEN	Proposed scheme after other low and zero carbon technologies - against be lean	38,351.79	-5.1%	5,215.84	59.4%
Total savings on residual emissions (against Baseline)				36.9%	

Table 10 – Total Energy and Carbon Emissions Savings Based on SAP 10.2 Carbon Factors

5.1.2. Breakdown of Energy Hierarchy Compliance

For a full Breakdown of the figures and calculations please see Appendix A – Energy Demand Assessment Spreadsheet.

Baseline Energy Demand

Standard Assessment Procedure - SAP 10.2 was used to produce example SAP reports to generate the figures used within the calculations.

Baseline energy demand (kWh pa)	**36,500.71**
Regulated emissions (kg pa)	**8,265.79**

Table11 – Baseline Energy demand and CO_2 Emissions

Be Green Stage

The following table demonstrates how the development achieves reduction in energy demand and carbon dioxide emissions through the implementation of any clean energy systems, such as heat pumps or communal heating. And the reduction in carbon dioxide emissions from LZC technologies.

Saving on emissions from the use of renewables (kg)	**3,049.95**
Saving on energy demand from the use of renewables (%)	**36.9%**

Table 12 – Table illustrating savings achieved at the Be Clean and Be Green Stage

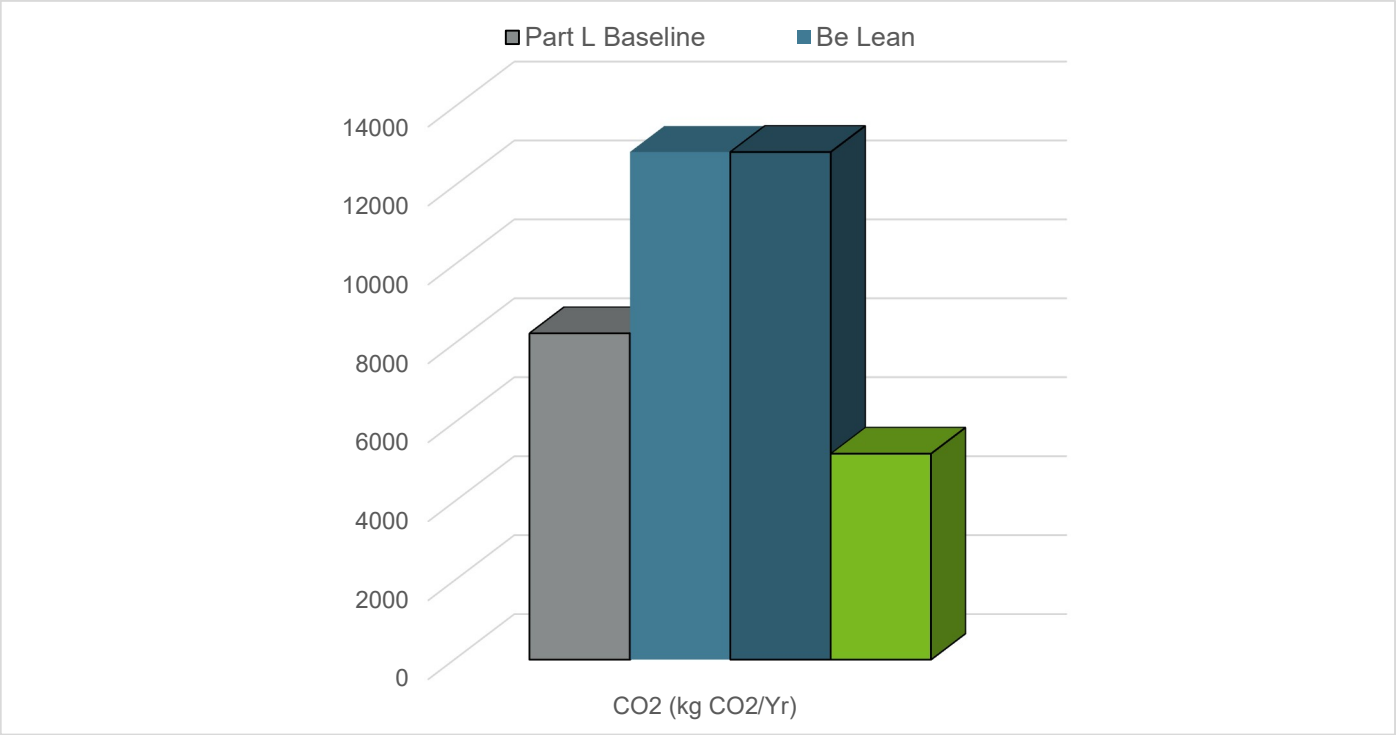


Figure 3 – Chart Illustrating the CO2 reduction over Part L Compliance

6. Other Sustainability Considerations

In addition to the primary building design and fabric, many other issues that will influence creating a Sustainable Development, including flood prevention, material use, waste minimisation and transport.

All the sections of creating a sustainable development should be taken into consideration from the start of the development and promoted throughout the building construction on site in order to maximise their benefits. Additionally, features which enable more efficient usage should also be specified to encourage the building users to maintain efficient use once construction has been completed.

6.1.1. Flood Risk

Flood risk is an increasingly important consideration in the face of climate change. As communities, infrastructure and ecosystems become more vulnerable to extreme weather events, understanding and managing flood risk is fundamental to creating resilient and sustainable developments.

From a sustainability perspective, flood resilience requires a holistic approach that integrates environmental, social and economic considerations. This includes managing surface water through sustainable drainage where appropriate, minimising the impact of flooding on people and property, and ensuring developments are designed to remain resilient under future climate scenarios.

The proposed site is located within Flood Zone 3, indicating a high probability of flooding from rivers or the sea. As such, flood risk will be a key consideration in the planning and design of the development. It is therefore recommended that a site-specific Flood Risk Assessment (FRA) is undertaken to assess the nature and extent of flood risk, demonstrate that the development can be safely accommodated, and identify any mitigation measures required in accordance with the National Planning Policy Framework (NPPF) and local planning policy. The FRA should also consider surface water management and, where appropriate, incorporate Sustainable Drainage Systems (SuDS) to minimise flood risk and enhance the long-term resilience of the development.

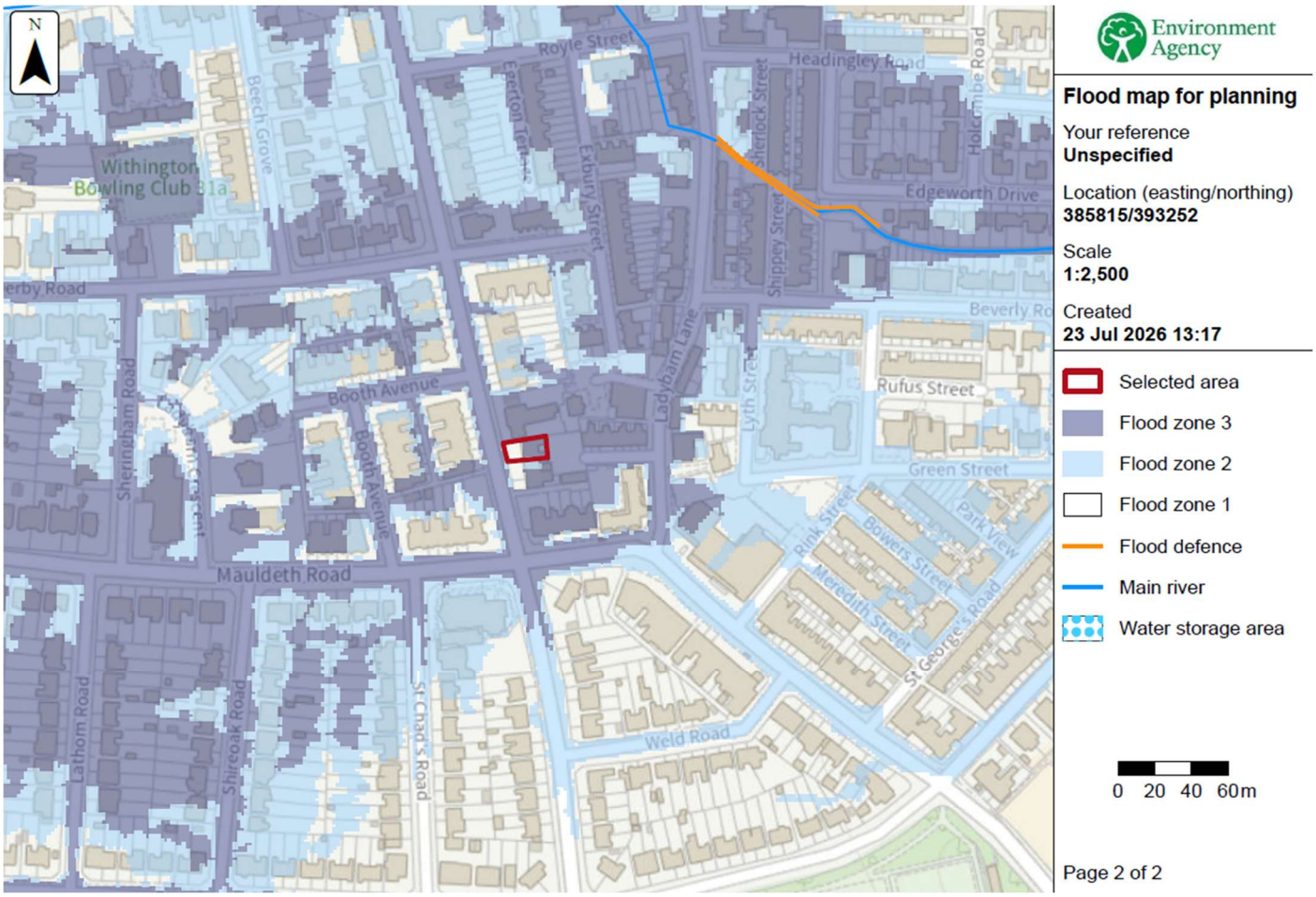


Figure 4 – Flood Risk Map

6.1.2. Internal Water Efficiency

Part G of the Building Regulations requires all new dwellings to have an internal water consumption of no greater than 125 litres per person per day (l/p/d). There is an optional stricter standard of 110 litres / person / day, unless specified to be less. Therefore, fittings proposed should have low flow rates, capacities, effective flush volumes etc. Example targets for these to achieve the required internal consumption are as follows:

Appliance	Unit of measure	Amount (litres)
WC (Dual flush)	Full flush volume	**4**
WC (Dual flush)	Part flush volume	**2.6**
Taps (excluding kitchen)	Flow rate l/min	**5**
Kitchen taps	Flow rate l/min	**6**
Bath	Capacity to Overflow	**170**
Shower	Flow rate l/min	**8**
Washing Machine	Litres / kg dry load	**8.17**
Dishwasher	Litres / place setting	**1.25**

Table 14 – Internal Water Efficiency Flow Rates

The above rates will achieve a total internal water consumption of 106.98.

The specifying of 'A' rated appliances will be prioritised where possible.

7. Conclusion

This Energy Statement has assessed the proposed refurbishment and extension at 105–111 Egerton Road, Manchester against the relevant national, Greater Manchester and Manchester City Council planning policies, including the Places for Everyone Joint Development Plan, Manchester Core Strategy and the National Planning Policy Framework. Although the proposal is not classified as a new-build development and is assessed under the Approved Document Part L methodology, the design has been developed with full regard to Manchester's wider sustainability and climate change objectives.

The proposed development adopts a fabric-first approach, prioritising improvements to the thermal performance of both the retained building and the new extension through enhanced insulation, improved glazing and improved airtightness. These measures minimise energy demand before considering building services, in accordance with the recognised energy hierarchy. The scheme is supported by efficient all-electric building services, incorporating air source heat pump hot water units and electric space heating, resulting in a low-carbon heating strategy that avoids the use of fossil fuel boilers.

SAP modelling demonstrates that the development achieves a 36.9% reduction in regulated CO_2 emissions compared with the Part L Building Regulations baseline, significantly improving the energy performance of the existing building whilst supporting Manchester's ambition to transition towards a low-carbon built environment. By refurbishing and extending the existing building rather than demolishing and rebuilding, the proposal also makes efficient use of existing resources and reduces the embodied carbon associated with new construction.

The development also incorporates a range of wider sustainability measures that extend beyond operational energy performance, including:

- The site is located within Flood Zone 3; therefore, a site-specific Flood Risk Assessment (FRA) is recommended to demonstrate that the development can be safely accommodated without increasing flood risk elsewhere and to identify any appropriate mitigation measures.
- Internal water consumption will be limited to 110 litres per person per day through the specification of water-efficient sanitary fittings and appliances.
- Existing building elements will be retained wherever practicable to minimise demolition waste and reduce embodied carbon.
- Construction waste will be managed in accordance with the waste hierarchy, prioritising the reduction, reuse and recycling of materials wherever feasible.
- Sustainable, responsibly sourced and low embodied carbon materials will be specified wherever practicable, with preference given to products supported by Environmental Product Declarations (EPDs) or equivalent environmental certification.
- Appropriate landscaping and biodiversity enhancements will be incorporated where practicable to improve the environmental quality of the site.
- Secure cycle parking will be provided to encourage sustainable travel and reduce reliance on private vehicles.

Overall, the proposed refurbishment and extension represent a sustainable and responsible redevelopment of an existing residential building. Through a combination of enhanced building fabric, efficient low-carbon building services and wider sustainability measures, the scheme accords with the relevant national and local planning policies and demonstrates a clear commitment to reducing energy demand, lowering carbon emissions and supporting Manchester's long-term objective of becoming a Zero Carbon City by 2038.

Appendix A:

House Type / Name	Flat 1	Flat 10	Flat 11	Flat 12	Flat 13	Flat 14	Flat 2	Flat 3	Flat 4	Flat 5	Flat 6	Flat 7	Flat 8	Flat 9	TOTAL (kWh/yr)	SAP 10.2	TOTAL (kgCO2/yr)
Frequency	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14		
BASELINE Dwelling Emission Rate (TER)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Carbon Emission Factor	Associated Total CO2 (kgCO2/yr)
Main Heating Fuel Requirement (TER)	1,217.48	660.05	485.61	631.41	473.51	608.76	1,681.94	1,339.47	1,399.82	688.07	365.91	580.25	438.51	612.44	11,183.23	0.210	2,348.48
Water Fuel Requirement (TER)	2,247.48	2,224.87	2,239.97	2,655.53	2,245.78	2,255.49	2,668.14	2,624.79	2,632.95	2,225.98	2,247.79	2,659.88	2,249.18	2,256.44	33,434.27	0.210	7,021.20
Electricity Pumps Fans Requirement (TER)	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	86.00	1,204.00	0.136	163.74
Electricity Lighting Requirement (TER)	107.27	123.92	116.86	180.71	132.07	108.65	160.97	156.19	178.77	104.29	110.50	165.66	109.77	105.73	1,861.36	0.136	253.14
PV Energy Produced (TER)	- 690.17	- 658.54	- 662.99	- 1,019.85	- 667.27	- 679.30	- 1,072.91	- 1,015.41	- 1,027.76	- 658.54	- 662.99	- 1,019.85	- 667.27	- 679.30	- 11,182.15	0.136	- 1,520.77
TOTAL PER DEVELOPMENT	2968.1	2436.3	2265.5	2533.8	2270.1	2379.6	3524.1	3191.0	3269.8	2445.8	2147.2	2471.9	2216.2	2381.3	36500.71		8265.8

AFTER ENERGY SAVING MEASURES Dwelling Emission Rate (DER)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Carbon Emission Factor	Associated Total CO2 (kgCO2/yr)
Main Heating Fuel Requirement (DER)	2,801.34	2,591.50	2,278.06	3,181.41	2,314.05	2,186.05	3,701.48	3,366.29	3,552.72	2,375.72	1,522.63	2,061.34	1,661.83	1,866.71	35,461.13	0.21	7,446.84
Water Fuel Requirement (DER)	1,931.29	1,895.90	1,909.13	2,315.74	1,912.53	1,930.47	2,371.16	2,311.43	2,320.56	1,905.36	1,927.46	2,340.72	1,928.93	1,938.64	28,939.32	0.136	3,935.75
Electricity Pumps Fans Requirement (DER)	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	641.00	8,974.00	0.136	1,220.46
Electricity Lighting Requirement (DER)	109.75	126.79	119.56	184.89	135.13	111.17	164.70	159.81	182.91	106.71	113.06	169.49	112.31	108.17	1,904.45	0.136	259.01
TOTAL PER DEVELOPMENT	5,483.38	5,255.19	4,947.75	6,323.04	5,002.71	4,868.69	6,878.34	6,478.53	6,697.19	5,028.79	4,204.15	5,212.55	4,344.07	4,554.52	75,278.90		12,862.05

FINAL Dwelling Emission Rate (DER)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Total Energy Demand (kWh/yr)	Carbon Emission Factor	Associated Total CO2 (kgCO2/yr)
Main Heating Fuel Requirement (DER)	2,352.06	2,220.81	1,838.92	2,521.55	1,880.85	1,760.82	2,957.61	2,659.68	2,846.18	1,848.07	1,263.82	1,637.16	1,375.87	1,512.74	28,676.14	0.136	3,899.96
Water Fuel Requirement (DER)	524.55	516.79	517.87	616.02	518.91	521.85	630.76	614.76	618.25	516.79	517.87	616.02	518.91	521.85	7,771.20	0.136	1,056.88
Electricity Pumps Fans Requirement (DER)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.136	-
Electricity Lighting Requirement (DER)	109.75	126.79	119.56	184.89	135.13	111.17	164.70	159.81	182.91	106.71	113.06	169.49	112.31	108.17	1,904.45	0.136	259.01
TOTAL PER DEVELOPMENT	2,986.36	2,864.39	2,476.35	3,322.46	2,534.89	2,393.84	3,753.07	3,434.25	3,647.34	2,471.57	1,894.75	2,422.67	2,007.09	2,142.76			5,215.84

CIVIC

thriving
together

team-civic.com