



ELEMENT
SUSTAINABILITY

58 MOSLEY STREET, MANCHESTER

ENVIRONMENTAL STANDARDS STATEMENT

DECEMBER 2023

REF: 2022.253



ELEMENT SUSTAINABILITY – ISSUE NOTES

Project No: 2022.253

Title: 58 Mosley Street, Manchester
Environmental Standards Statement

Client: Jones Lang Lasalle Limited

Status: Final

Version:	1.0	
Date:	December 2023	
Prepared by:	Checked by:	Approved by:
		
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Version	Version Details	Date Issued	Issued by
0.0	Draft for client comment	7 th December 2023	SD
1.0	Final version	11 th December 2023	CA



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ELEMENT SUSTAINABILITY

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1. INTRODUCTION

Element Sustainability has been commissioned by Jones Lang Lasalle Limited (JLL) to review the sustainability and energy performance of the proposed refurbishment of 58 Mosley Street, located within Manchester City Centre.

The purpose of this statement is to summarise the relevant policy background and requirements of Manchester City Council and to demonstrate the ways in which the developer has addressed these aims through their proposals, ensuring all practicable measures have been taken to deliver a sustainable development at this site.

Details of the design attributes, specifications and characteristics of the scheme are appraised in order to demonstrate how the proposals contribute to sustainable development in Manchester and seek to mitigate the environmental impacts of the scheme, providing a sustainability appraisal in support of the planning application.

This report is intended to resolve planning condition 4, which states:

Before any above ground works hereby approved commence, an Environmental Standards Statement confirming that the development will achieve NABERS UK 5 and/or BREEAM 'Very Good' and how this will be achieved shall be submitted to and approved in writing by the City Council as local planning authority. This approved Environmental Standards Statement shall be complied with for the duration of the use of the building hereby approved. Post construction review certificate(s) shall be submitted to and approved in writing by the City Council as local planning authority, before the development hereby approved is first occupied.*



2. DEVELOPMENT PROPOSALS

2.1 Development Site Description

The application site is located within Manchester City Centre and currently comprises a nine-storey office building, occupied by both Slater and Gordon and the Consultancy Instant Group. The site is bound by West Mosley Street to the north, Charlotte Street to the east, Mosley Street to the south and Booth Street to the west. Within the immediate vicinity of the site are other commercial, retail and food and beverage facilities.

There are no residential developments within close proximity to the site and it is not within a designated conservation area.

The site location plan and the pre-development site are presented in Figure 2.1 and 2.2 below.

Figure 2.1 – Pre-developed Site



2.2 Development Proposals

The development proposals comprise the extensive refurbishment of the existing 58 Mosely Street buildings' reception, landlords core areas, office floors three to seven and basement amenity areas. The development will also include for the construction of a new roof terrace.

Figure 2.2 to 2.9 presents the proposed floor plans and elevations for the proposed 58 Mosely Street development.



Figure 2.2 – Proposed South Elevation

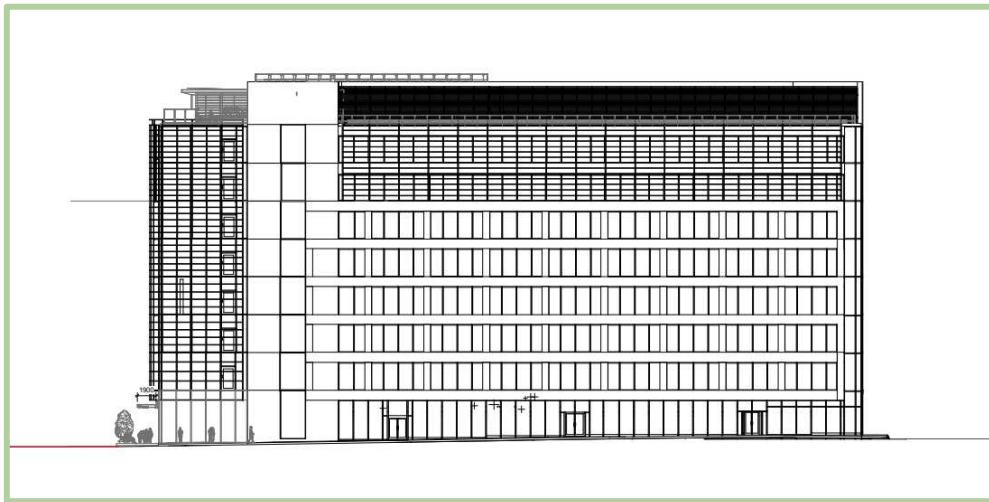


Figure 2.3 – Proposed West Elevation

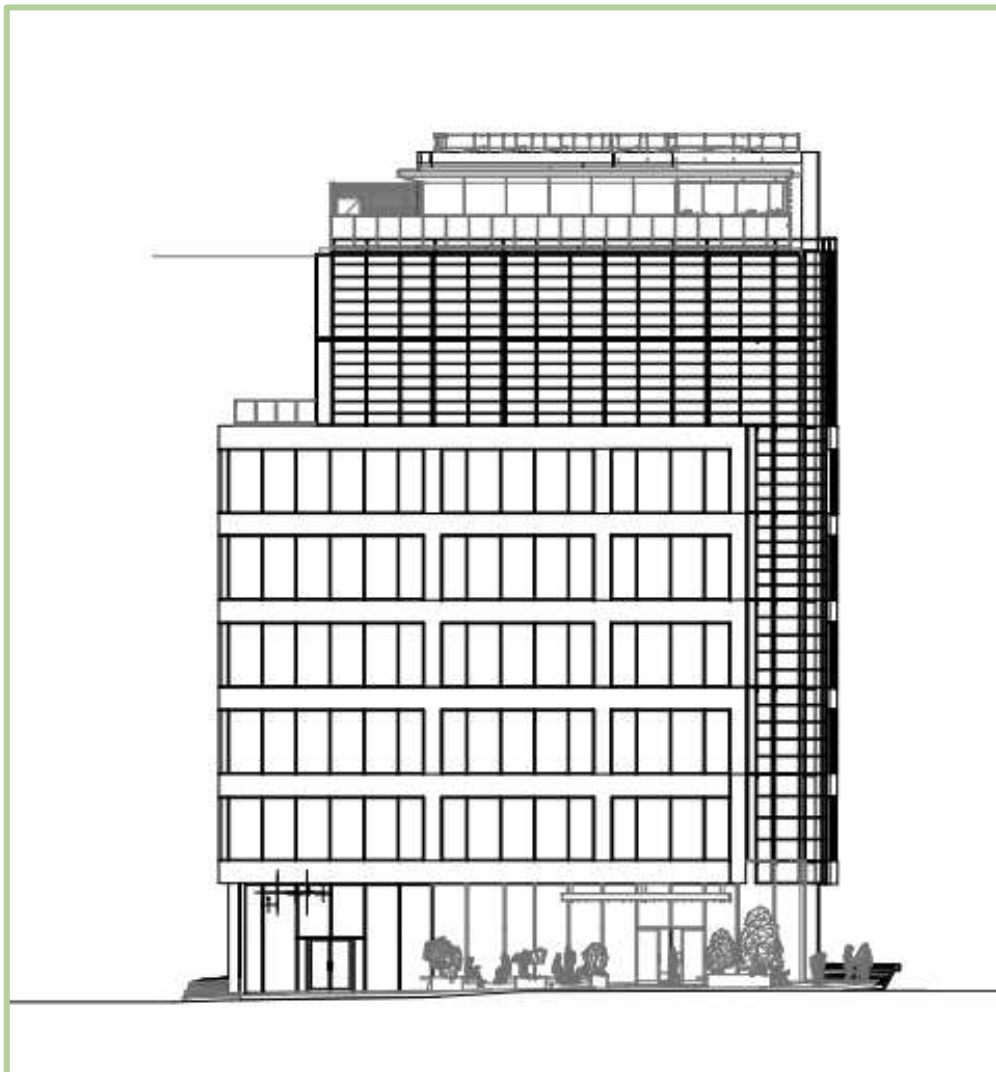


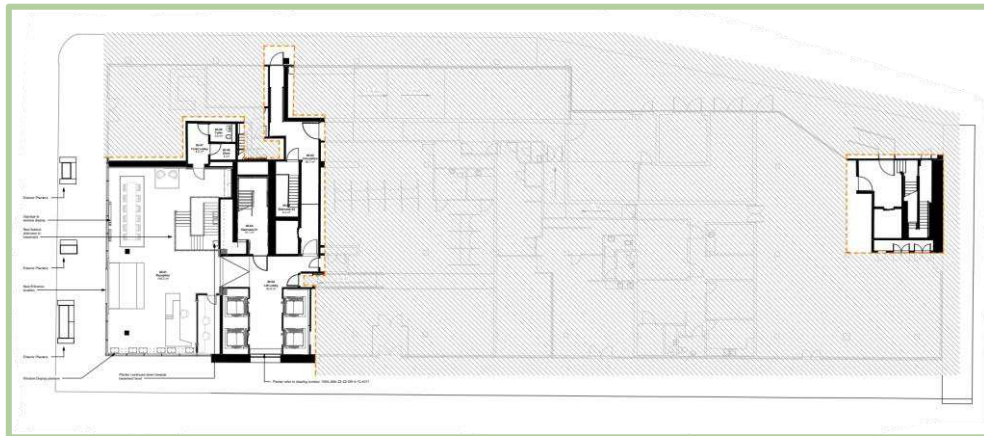
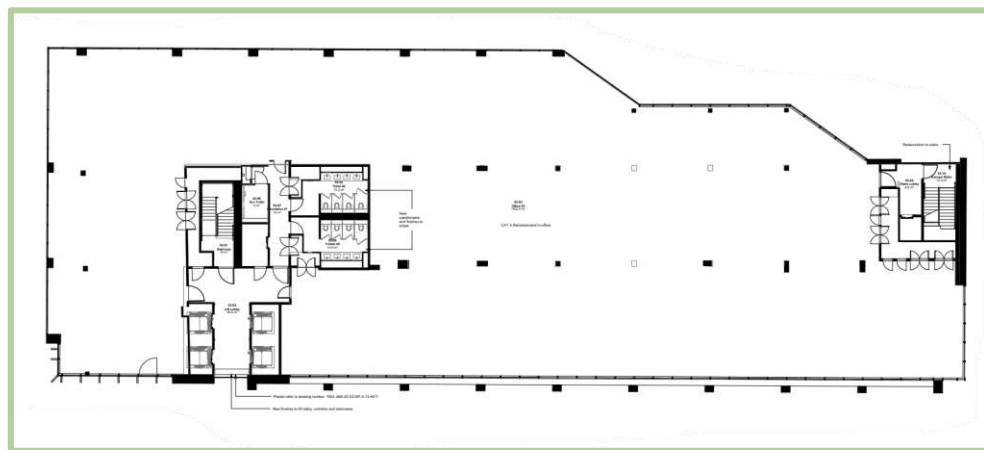
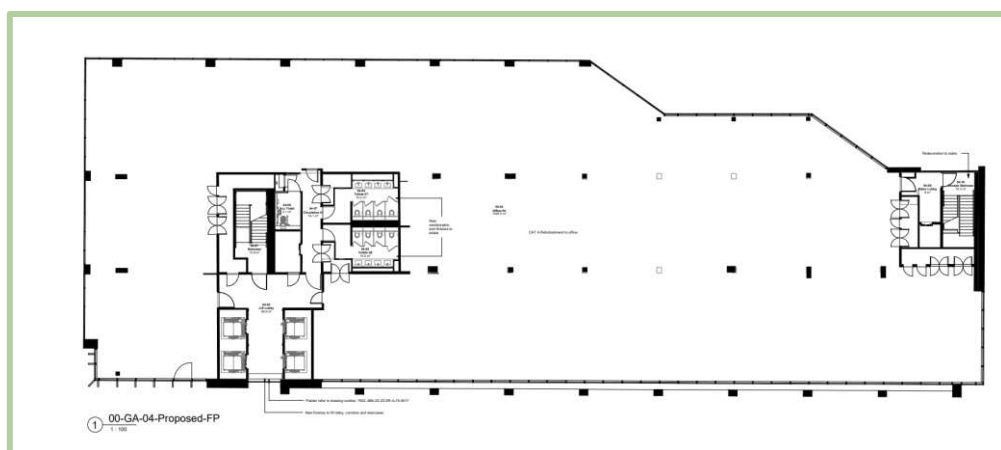
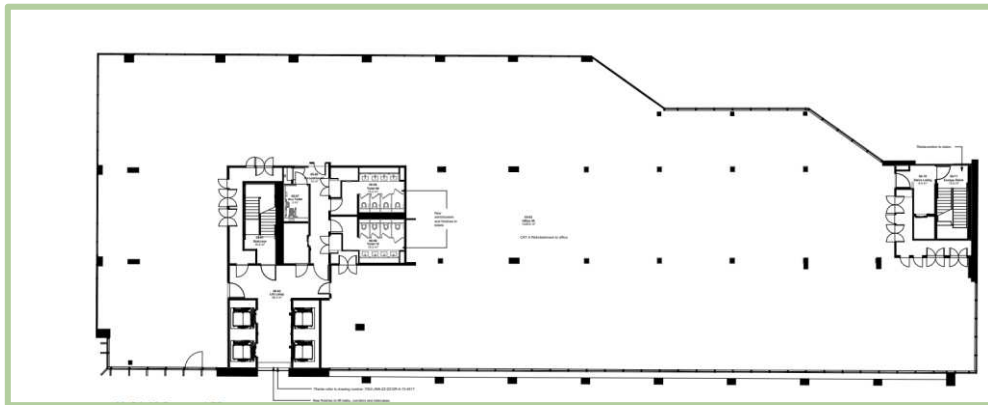
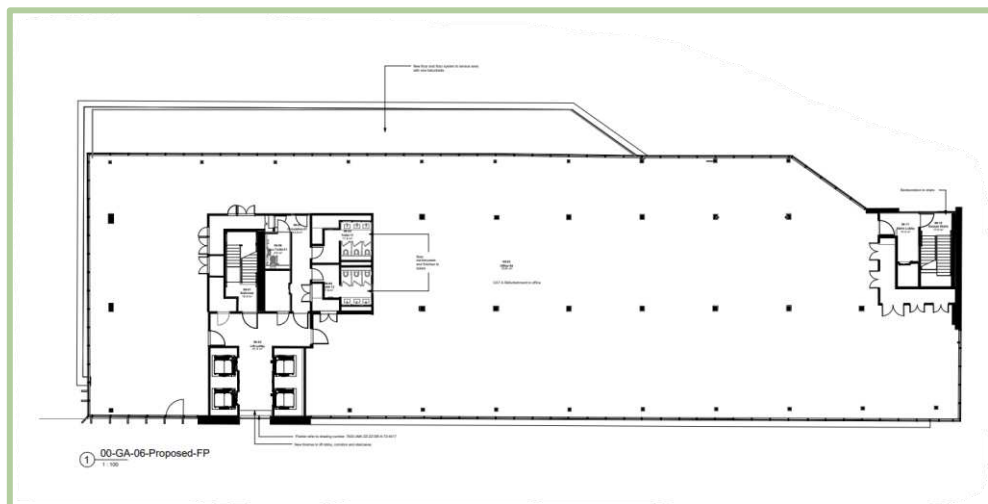
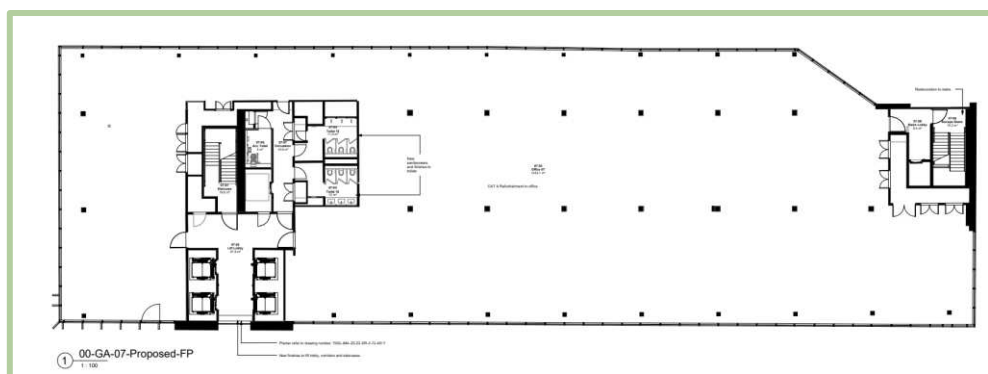
Figure 2.4 – Proposed Level 00 General Arrangement Plan*Figure 2.5 – Proposed Level 03 General Arrangement Plan**Figure 2.6 – Proposed Level 04 General Arrangement Plan*

Figure 2.7 – Proposed Level 05 General Arrangement Plan*Figure 2.8 – Proposed Level 06 General Arrangement Plan**Figure 2.9 – Proposed Level 07 General Arrangement Plan*

3. POLICY REVIEW

3.1 National Planning Policy

The National Planning Policy Framework was updated on 5th September 2023 and sets out the government's planning policies for England and how these are expected to be applied. The purpose of the planning system is to contribute to the achievement of sustainable development. The planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways, as set out below:

An economic role – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;

A social role – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering well-designed, beautiful and safe places, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and

An environmental role – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

These objectives should be delivered through the preparation and implementation of plans and the application of the policies in this Framework. Planning policies and decisions should play an active role in guiding development towards sustainable solutions, but in doing so should take local circumstances into account, to reflect the character, needs and opportunities of each area.

3.2 Local Planning Policy

3.2.1 Manchester Core Strategy

Manchester's Core Strategy was adopted on the 11th July 2012 and remains the key document in the adopted Manchester Local Plan. It sets out the long-term strategic policies for Manchester's future development and will form the framework that planning applications will be assessed against.

Policy EN 4 - Reducing CO₂ Emissions by Enabling Low and Zero Carbon Development: The Council will seek to reduce fuel poverty and decouple growth in the economy, growth in CO₂ emissions, and rising fossil fuel prices, through the following actions:

All development must 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; and,



- To meet residual energy requirements using low or zero carbon energy generating technologies.

Where possible new development and retrofit projects will be used as a mechanism to help improve energy efficiency and provide low and zero carbon energy supplies to existing buildings.

Where appropriate new development and retrofit projects will be required to connect to and / or make contributions to low or zero carbon energy schemes and / or to incorporate provision to enable future connection to any existing / potential decentralised energy schemes.

The use of building materials with low embodied carbon in new development and refurbishment schemes

Policy EN 5 - Strategic Areas for Low and Zero Carbon Decentralised Energy Infrastructure: Within Manchester it is considered that the following strategic areas, will have a major role to play in achieving an increase in the level of decentralised, low and zero carbon energy supplies available:

- The Regional Centre, which also includes the Oxford Road Corridor and Eastlands;
- 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.

Policy EN 6 - Target Framework for CO₂ Reductions from Low or Zero Carbon Energy Supplies: The Council requires applications for residential development of ten or more units and all other development over one thousand square metres to meet, as a minimum, the targets shown in the tables below, unless unviable.

Table 3.1 – Policy EN6 Non-Domestic CO₂ Emissions Reduction Targets

Target	% Minimum Requirements
Target One: Network development area	CHP/District heating anchor or connection or where not feasible a 15% increase on Part L 2010
Target Two: Electricity intense buildings	+10% increase on Part L 2010
Target Three: Micro generation area	+15% increase on Part L 2010

Policy EN 8 – Adaption to Climate Change: 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.

Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO₂ mitigation under Policy EN6, subject to sufficient evidence to quantify their contribution to compliance.

Policy EN9 - Green Infrastructure: New development will be expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Where the opportunity arises, and in accordance with current green infrastructure strategies, the Council will encourage developers to enhance the quality and quantity of green infrastructure, improve the performance of its functions and create and improve linkages to and between areas of green infrastructure. Where the benefits of a proposed development are considered to outweigh the loss of an existing element of green infrastructure, the developer will be required to demonstrate how this loss will be mitigated in terms of quantity, quality, function and future management.

Policy EN14 – Flood Risk: The Council requires developments to:

- Be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA); and
- All new development should minimise surface water run-off, including through Sustainable Drainage Systems (SUDS) and the appropriate use of green infrastructure. Developers should have regard to the surface water run-off rates in the SFRA User Guide. In critical drainage areas, evidence to justify the surface water run-off approach / rates will be required.

Policy EN15 – Biodiversity and Geological Conservation: The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the city.

Developers will be expected to identify and implement reasonable opportunities to enhance, restore or create new biodiversity, either on-site or adjacent to the site, contributing to linkages between valuable or potentially valuable habitat areas where appropriate, with reference to:

- The Manchester Biodiversity Strategy, which provides further details of priority habitats within Manchester and opportunities for biodiversity enhancement including corridors such as the Mersey, Medlock and Irk River valleys, the canals and disused railway lines, and areas of managed greenspace particularly in parks;
- The Green Infrastructure Framework for Greater Manchester, which encompasses an ecological framework that seeks to guide and inform habitat creation and repair, including identifying large 'biodiversity opportunity areas' including the Moston Brook Corridor and Nutsford Vale;
 - Manchester's Climate Change Action Plan;
 - The Strategic Flood Risk Assessment (SFRA) for Manchester;



- The River Basin Management Plan for the North West; and,
- The Manchester Tree Strategy.

Any adverse impacts on biodiversity will need to be justified against the wider benefits of the proposal, assessed against other Local Development Framework policies. Where adverse impacts are unavoidable, developers will be required to provide appropriate mitigation and / or compensation. Development should, wherever possible, seek to maintain, enhance or restore existing geology.

Policy EN16 – Air Quality: The Council will seek to improve the air quality within Manchester, and particularly within Air Quality Management Areas. Developers will be expected to take measures to minimise and mitigate the local impact of emissions from traffic generated by the development, as well as emissions created by the use of the development itself.

Policy EN17 – Water Quality: The Council require:

- New developments to avoid any adverse impact on water quality, including during the construction phase, and wherever possible should seek to enhance water quality, both chemical and ecological; and,
- Development should minimise surface water run-off from development and associated roads, and maximise the use of appropriate sustainable drainage systems, to minimise groundwater contamination, and to avoid pollutants reaching watercourses.

Policy EN19 – Waste: The Council will:

- Require all developers, including those of new waste management facilities within the district, to demonstrate the proposal's consistency with the principles of the waste hierarchy (prevention, reduction, re-use, recycling/composting, energy recovery, final disposal);
- Require all developers to submit a waste management plan to demonstrate how both construction and demolition waste will be minimised, and recycled on site wherever possible, and how the sustainable waste management needs of the end user will be met; and,
- Encourage communities to take responsibility for the waste they create through the provision of accessible facilities.

Policy DM1 – Development Management: All development should have regard to the following specific issues, for which more detailed guidance may be given within a supplementary planning document:

- Accessibility: buildings and neighbourhoods fully accessible to disabled people, access to new development by sustainable transport modes;
- Community safety and crime prevention;
- Design for health;
- Adequacy of internal accommodation and external amenity space;
- Refuse storage and collection;
- Effects relating to biodiversity, landscape, archaeological or built heritage;
- Green infrastructure including open space, both public and private;
- The use of alternatives to peat-based products in landscaping/gardens within development schemes;
- Flood risk and drainage and,



Subject to scheme viability, developers will be required to demonstrate that new development incorporates sustainable construction techniques (In terms of energy targets this policy should be read alongside policy EN6 and the higher target will apply).

Policy T1 – Sustainable Transport: 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;
- Facilitate modes of transport that reduce carbon emissions e.g by incorporating charging points for electric vehicles, subject to their appropriate design and location;
- Would reduce the negative impacts of road traffic, for example, congestion, air pollution and road accident casualties; and,
- Take account of the needs of road users according to a broad hierarchy consisting of, in order of priority:
 - pedestrians and disabled people
 - cyclists, public transport,
 - commercial access,
 - general off peak traffic,
 - general peak time traffic.

3.3 Guide to Development in Manchester, Supplementary Planning Document

Manchester's Core Strategy requires that all new developments should accord with the design guidance set out in the Supplementary Planning Documents (SPD). The Guide to Development in Manchester SPD was adopted on 11th April 2007 and supports and enhances the ongoing shaping of the city by providing a set of reasoned principles which will guide developers, designers and residents. These principles include a number of environmental standards, and includes the following categories which are identified in the SPD:

- | | |
|--|----------------------------|
| • Energy efficiency; | • Waste management; |
| • Renewable energy; | • Construction management; |
| • Environmental design; | • Biodiversity; and, |
| • Water management and weather resilience; | • Waterways. |

3.4 Manchester's Great Outdoors

The Green and Blue Infrastructure Strategy for Manchester aims to invest in the city's green and blue infrastructure over the next ten years (by 2025). Four objectives have been established to enable the vision to be achieved:



- Improve the quality and function of existing green and blue Infrastructure, to maximise the benefits it delivers.
- Use appropriate green and blue infrastructure as a key component of new developments to help create successful neighbourhoods and support the city's growth.
- Improve connectivity and accessibility to green and blue infrastructure within the city and beyond.
- Improve and promote a wider understanding and awareness of the benefits that green and blue infrastructure provides to residents, the economy and the local environment.

3.5 Climate Emergency

On 10th July 2019, a motion asking Manchester City Council (MCC) to formally declare a **climate emergency** was unanimously agreed. The motion declares that climate change is a serious risk to Manchester's future. Manchester is committed to embedding the issue as an integral part of council decision-making – making sure that all key decisions are taken with the city's target of becoming zero-carbon by 2038 in mind. The council has agreed the following:

- To deliver the 2038 zero carbon target and determine if an earlier target can be possible;
- Make climate breakdown and the environment an integral part of activity throughout the council, including all decision making, ensuring key decisions take into account the impact on achieving the zero-carbon target;
- Investigate and introduce measures to help reach domestic zero carbon levels, including addressing fuel poverty and retrofitting existing homes; and
- Investigate ways to ensure that future local plans place a mandatory requirement for all new development to be net zero carbon by the earliest possible date.

In March 2020 the Executive adopted the Manchester Climate Change Framework 2020-2025. The five-year framework sets out measures that MCC will take in order to reduce carbon emissions from its buildings, energy use and transport. Measures include retrofitting buildings to improve energy efficiency, increasing the use of electric vehicles, and seeking 100% renewable energy. Whilst this has also not been formally adopted into planning policy, it is a key consideration for future development proposals.

3.6 Emerging Policies

The Draft 'Places for Everyone' (PfE) Plan is a new 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 prepared by the Greater Manchester Combined Authority on behalf of the nine districts.

The Draft Plan will determine the kind of development that takes place across the city-region, maximising the use of brownfield land and urban spaces while protecting green belt land from the risk of unplanned development. It will also ensure all new developments are sustainably integrated into Greater Manchester's transport network or supported by new infrastructure.



The nine Places for Everyone local planning authorities are now inviting views on the Modifications Consultation 2023 from 11th October 2023 and ending on 6th December 2023. The Plan is therefore considered to be in an advanced state of preparation.

3.7 Regulatory Framework

Building Regulations, Part L - Conservation of Fuel and Power sets the compliance standards for energy demand and carbon dioxide emissions from buildings. Guidance on how to meet the requirements of this regulation is provided within a number of approved documents. The relevant document is referenced below:

Approved Document Volume 2: Buildings other than dwellings: Gives guidance on how to comply with Part L of Schedule 1 to the Building Regulations and the energy efficiency requirements for buildings other than dwellings.

Extensions to and work on existing buildings are required to consider the following:

- Limiting heat gains and losses;
- Changes to building services;
- New elements in existing buildings, including replacement of a thermal element and construction of an extension;
- Existing elements in existing buildings, including renovation or retaining a thermal element, material change of use and change to energy status; and,
- Consequential improvements

3.8 Applicable Targets

Based upon a review of relevant planning policy requirements, legislative drivers, and client priorities, the following list provides a brief precis of the key criteria that should be targeted for this development:

Manchester Core Strategy

- | | |
|---|---|
| • Policy EN 4 - Reducing CO ₂ Emissions by Enabling Low and Zero Carbon Development | • Policy EN9 - Green Infrastructure |
| • Policy EN 5 - Strategic Areas for low and zero carbon decentralised energy infrastructure | • Policy EN14 – Flood Risk |
| • Policy EN 6 - Target Framework for CO ₂ Reductions from Low or Zero | • Policy EN15 – Biodiversity and Geological Conservation |
| • Policy EN 8 – Adaption to Climate Change | • Policy EN16 – Air Quality |
| | • Policy EN19 – Waste |
| | • Policy DM1 – Development Management |
| | • Policy T1 - Sustainable Transport |

Guide to Development in Manchester, Supplementary Planning Document

The Green and Blue Infrastructure Strategy for Manchester

Manchester City Council Climate Emergency Declaration

Building Regulations, Part L - Approved Document Volume 2: Buildings other than Dwellings (2021 edition)



4. SUSTAINABILITY STATEMENT

This section provides an appraisal of the proposals and details the specific approach, design features and specifications which will contribute to reducing the environmental impact of the scheme.

4.1 Energy Performance

In order to limit energy demand and carbon dioxide (CO₂) emissions from the operation of the building, a number of design features will be integrated that will collectively contribute towards the emissions reduction target for the scheme.

Detailed measures are presented in Section 5 of this report, but in essence, the energy strategy proposed is an enhanced 'fabric led' solution coupled with the inclusion of an energy efficient servicing provision to maximise the buildings' performance.

The reduction in energy demand will be achieved through the following design measures and low carbon technology options:

- Improved thermal insulation;
- A low air permeability;
- Efficient air source heat pumps; and,
- Low energy lighting.

These measures will secure **a reduction in the Building Emission Rate (BER)** when compared against the current 58 Mosley Street scheme.

4.2 Flood Risk and Surface Water Management

Data obtained from the Environment Agency was used to determine which flood zone the site is located within and the potential flood risk to the proposed development.

Figure 4.1 below presents the latest Environment Agency (EA) Flood Zone Map data which demonstrates that the site is located wholly within Flood Zone 1, demonstrating a low probability of flooding from rivers.



Figure 4.1 – Environment Agency Flood Risk Zone Map

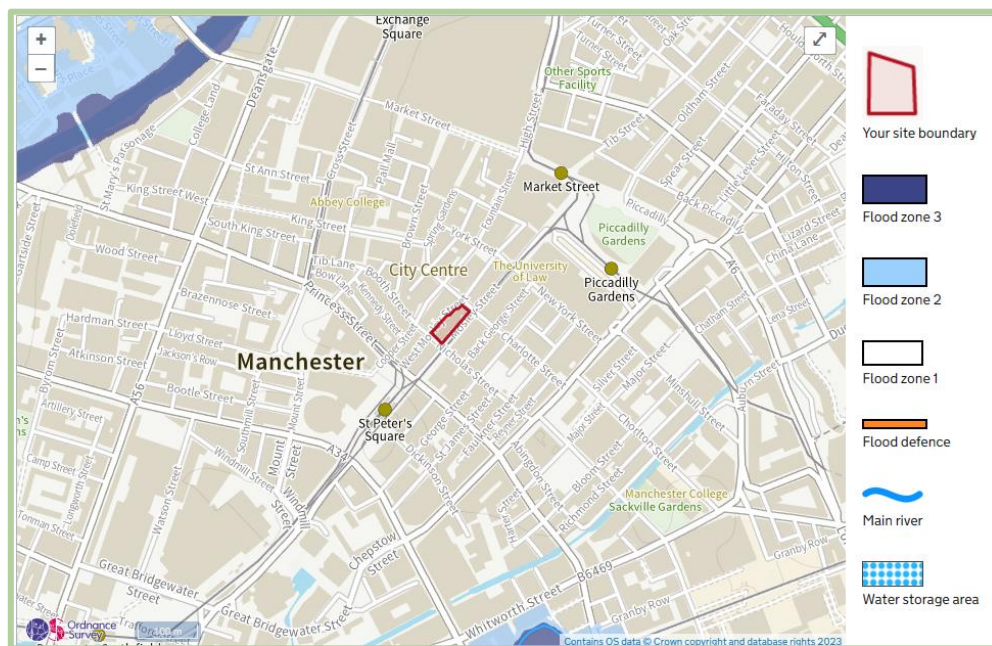


Figure 4.2 demonstrates that the area is at low risk from surface water flooding as well, with a chance of flooding of less than 0.1% each year. The proposed development will also not increase the risk of surface water flooding.

Figure 4.2 – Extent of Flooding: Flood Risk from Surface Water



In accordance with **Manchester Core Policy EN14 – Flood Risk** the proposed development is not considered to be in an area at high risk of flooding.

4.3 Materials

A life cycle assessment (LCA) has been produced for the proposed scheme to assess the carbon emissions associated with the construction and operation phases of the scheme. The development will contribute towards making more efficient use of non-renewable material resources and to reducing the lifecycle impact of materials used in the refurbishment activities. This is demonstrated by the selection of:

- Materials with a low environmental impact throughout their life cycle will be prioritised. Plus, materials with associated Environmental Performance Declarations (EPDs) will be favoured;
- Materials will be sourced in accordance with a Sustainable Procurement Plan (SPP). A SPP includes sustainability aims, objectives and strategic targets to guide procurement activities;
- Responsibly sourced materials from suppliers operating an Environmental Management System and procuring timber verified by either the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification standard (PEFC) will be prioritised;
- Material selection will be carefully considered to avoid the use of toxic materials, such as Volatile Organic Compounds (VOCs) and contribute towards creating a healthy indoor environment;
- The re-use of the existing building materials will offer a significant saving on embodied carbon associated with construction materials. The refurbishment of existing buildings is an inherently low carbon alternative to the 'demolish and new build' method of construction. Retention of existing structural elements will reduce the need for virgin materials and limit the embodied carbon levels of the scheme.

Local sourcing of construction materials where feasible and viable will minimise the impact of carbon dioxide emissions associated with the transportation of materials. In addition to this, **materials with low levels of embodied carbon will be prioritised in accordance with Manchester Core Policy EN4 - Reducing CO₂ Emissions by Enabling Low and Zero Carbon Development.**

4.4 Water Efficiency

The proposed development will be designed to reduce mains / potable water consumption and will include the following water efficient designs and equipment:

- A water efficiency strategy will be determined for the site and will include for the provision of 'A' rated appliances as a minimum;
- The scheme is targeting a 50% improvement over the BREEAM baseline specification. The baseline component specification is equivalent to the water efficiency of industry standard components, steered by the minimum levels required by the Water Supply (Water Fittings) Regulations (157) and Part G of the Building Regulations;



- A water meter on the mains water supply to the building will be specified to monitor and manage consumption.

Efficient water fixtures will be specified throughout the building such as low flow taps and dual flush WCs in order to reduce water consumption.

4.5 Ecology and Biodiversity

Due to the city centre location of the proposed development, and the fact that the scheme is focussing on the 'Cat A' refurbishment of selected floors within the existing building, there are limited opportunities to enhance the ecological status of the site. However, additional planting will be provided by the main entrance and a soft screening display will be installed internally.

In line with Manchester Core **Policy EN15 - Biodiversity and Geological Conservation** the developers will identify and implement reasonable opportunities to enhance, **restore or create new biodiversity, either on-site or adjacent to the site**, contributing to linkages between valuable or potentially valuable habitat areas where appropriate

4.6 Waste Management

4.6.1 Construction Waste

Best practice techniques to prevent and minimise waste during the fit-out phase of the development will be adopted, as follows:

- A site waste management plan (SWMP) will be produced by the developer to limit the on and off-site environmental impacts of the refurbishment activities;
- The SWMP will detail:
 - Recycled and secondary materials;
 - Waste reduction;
 - Waste segregation;
 - Waste recovery; and,
 - Waste disposal.
- This development will promote the minimisation of waste arising and seek to maximise the use of recycled materials in construction.

The **principal contractor will implement sound environmental management practices** and consideration for neighbouring sites during their activities on-site.

4.6.2 Operational Waste

The operational waste strategy for the scheme focuses on the segregation of waste at source, in order to maximise the potential for the building occupants to recycle. All building users will be informed on collection frequency, as well as guidance on local recycling facilities to assist with the management and storage of waste.



The proposed waste management strategy has been developed in compliance with the policies of Manchester City Council to optimise recycling rates:

- Waste will be segregated at source with the help of split bins to receive multiple streams of waste – general, recyclables and compost; and,
- Building users will have their waste collected by the building management company and transferred to the designated refuse area, to be collected by refuse operators on the designated collection day.

The proposed development will seek to **minimise waste and promote recycling**, during both the fit-out phase and occupation in accordance with **Manchester Core Policy EN19 - Waste**.

4.7 Pollution

To reduce the schemes impact on the surrounding communities and environments, the proposals will include the following:

- The external lighting strategy will be designed to reduce unnecessary light pollution through effective design and the installation of suitable light fittings;
- Pollution Prevention Guidance will be adhered to in respects of air (dust) and noise;
- Dust suppression measures will also be put in place as part of the main contractor's Environmental Management Plan, such that any potential risks are minimised.

The principal contractor will put measures in place to ensure that the surrounding area will not be polluted as a direct result of the activities on site during the construction phase.

4.8 Health and Wellbeing

To enable the occupants of the proposed development to lead lower impact lifestyles and enhance their quality of life, the following measures will be delivered:

- The interior will encourage health and wellbeing through the refurbishment of the basement area, which is to include a new cycle store, gym facilities, co-working and multi-use spaces for the use of the office tenants to enhance their wellbeing and encourage green travel to work.

Good levels of natural day lighting will be achieved within the building. This will provide a good working environment for the occupants and reduce the need for energy to provide artificial lighting.



4.9 Transport

A review of the most appropriate and sustainable modes of transport has been conducted to assess the feasibility of each transport option available to the future occupiers of the proposed development. The conclusions that can be drawn from this appraisal are as follows:

4.9.1 Public transport

- The closest bus stop is located east of the site, along Charlotte Street (Charlotte Street/ Chinatown stop).
- St Peters Square tram stop is the closest Metrolink stop to the site, which can be accessed via a two-minute walk.
- The nearest railway station to the proposed development is Manchester Oxford Road, which can both be accessed within a ten-minute walk.

4.9.2 Cycling and Walking

- The proposed development will incorporate a new cycle store within the basement area, which will provide thirty-four parking spaces.
- The site benefits from an excellent pedestrian infrastructure within the vicinity of the site. There are lit footways and crossing points linking the site to the surrounding area and the wider public realm.
- The general topography of area is reasonably flat, which should assist in encouraging visitors of the proposed development to travel by bike.
- There are also a range of local amenities within both suitable walking and cycling distances.

Due to the site's proximity to local amenities and the presence of public transport services within easy walking distance, **the site is considered to be well located to encourage trips to be made on foot, bicycle or via public transport in accordance with the Manchester Core Policy T1 – Sustainable Transport.**



5. ENERGY STRATEGY

An energy strategy has been prepared by Crookes Walker Consulting Limited, which outlines the approach taken to minimise the environmental impact of the development, pursuant to policies SP1, T1-T3, EN4-EN7 and DM1 of the Core Strategy, policy DP3 of Regional Spatial Strategy for the Northwest (RSS), and the principles contained within The Guide to Development in Manchester SPD (2007), and the National Planning Policy Framework.

The proposed scheme is also aiming to achieve a Nabers UK 5-star rating and will achieve at least a BREEAM rating of 'Very Good'. The approach taken to achieve the Nabers rating is presented in section 8 of this report.

5.1 Build Fabric and Thermal Performance

The standard measurement of heat transfer through a given building material or construction type is the U-value ($\text{W/m}^2\text{K}$). The lower the U-value, the more slowly heat transfers and is lost out of a building. In buildings, heat loss generally occurs through the following main areas and elements of the construction:

- Ground floor;
- External walls;
- Roofs;
- Doors and windows;
- Thermal bridging; and,
- Uncontrolled ventilation.

The improved material specification outlined in Table 5.1, represents the fabric components associated with the existing building. In addition to this, the newly constructed terrace and pavilion roof have also been included.

Table 5.1 – Proposed Fabric Specification

Item	Specification
Facade – External Wall	$U=0.35 \text{ W/m}^2\text{K}$
Solid Floor	$U=0.25 \text{ W/m}^2\text{K}$
Roof	Existing - $U=0.25 \text{ W/m}^2\text{K}$ Terrace (new construction) - $U=0.18 \text{ W/m}^2\text{K}$ Pavilion Roof (new construction) – $0.12 \text{ W/m}^2\text{K}$
Windows	$U = 1.20 \text{ W/m}^2\text{K}$, G Value = 0.40
Design Air Permeability	$5.00 \text{ m}^3/\text{hm}^2$ (@50Pa.)

This enhanced material specification and design will provide the following benefits:

- **Thermal insulation** will ensure low U-values for all heat loss elements and will minimise heat loss through the building's thermal envelope;
- **Retention of existing double glazed windows** will limit heat loss and the glazing g value will optimise beneficial solar gains but limit the propensity for the building to overheat;



- **Low air tightness** (design air permeability targeting 5.00m³/hm²) will minimise uncontrolled ventilation. This will reduce heat losses and provide high levels of occupant comfort;

This enhanced fabric specification will **ensure an inherently energy efficient development**, focussing upon limiting demand side reductions in accordance with the energy hierarchy.

5.2 Building Services

The proposed mechanical and electrical specification that will be incorporated to ensure efficient servicing of the scheme is presented in Table 5.2.

Table 5.2 – Proposed Mechanical and Electrical Specification

Item	Specification
Space Heating	Fan coil units and variable refrigerant flow condenser units
Ventilation	Mechanical ventilation with heat recovery
Lighting	100% 'Low E' / LED
Water Heating	DHW circulation pump.

The mechanical and electrical specification will provide the following benefits:

- **Low energy and LED lighting** - will be specified in order to maximise operational efficiencies and lifespan of the fittings. LEDs operate with an estimated energy efficiency of up to 90% when compared to traditional lighting and conventional light bulbs. This means that about c.90% of the electrical energy is converted to light, rather than wasted heat as in conventional bulbs.
- **Heat pumps** - Air Source Heat Pumps (space heating) are a low carbon solution that are ideal for non-residential spaces. They are a highly efficient method of producing heat as ASHPs collect low-grade heat from the air to supply useful heat for space heating requirements by applying additional energy input (in the form of electricity).
- **Mechanical Verification Heat Recovery (MVHR)** - systems will be specified to maintain a healthy living environment and further reduce the heat losses and the energy demand of each zone. The proposed MVHR system can recover heat from the extracted stale air from the rooms by using a counter flow heat exchanger which 'pre-heats' cool incoming, fresh air. The outgoing and incoming air pass next to each other, but do not mix.

This mechanical and electrical specification **will deliver a Building Regulation Part L Approved Document Volume 2 (2021) compliant scheme** for all aspects of the proposed development.



6. PROPOSED RENEWABLE ENERGY SOLUTION

An analysis of the most appropriate renewable energy options has been undertaken to ensure compliance with Building Regulation Part L.

A number of renewable energy technologies have been considered for this site, including:

- Solar hot water;
- Photovoltaics (PV);
- Wind;
- Air source heat pumps;
- Ground source heat pumps; and,
- Biomass heating.

A review of the development proposals and site location concludes that the Photovoltaic Panels (PV) are feasible for this scheme, as detailed below in Table 6.1:

Table 6.1 – Renewable Technologies Review

Technology	Description	Advantages & Limitations	Feasibility
Solar Hot Water	Solar Hot Water utilises the energy in sunlight and diffuse daylight to heat water for use in buildings. The main component of any solar water heating system is the collector, which absorbs the radiant energy of the sun and converts it to heat energy.	<ul style="list-style-type: none"> ✓ Low maintenance. ✓ Feasible for small scale developments. 	<p>No - This technology is not considered to be a feasible option for this site as these solar thermal technologies make only a relatively limited contribution to reducing the building's energy demand and carbon dioxide emissions. Furthermore, there are potential problems associated with routing the pipework through the building.</p>
		<ul style="list-style-type: none"> ✗ Panels ideally facing south at 30° tilt for optimum efficiency. 	
Photovoltaics (PV)	Photovoltaic (PV) panels harness solar thermal energy and convert it into electricity which can then be used within a building. The panels may be roof or floor mounted and orientated in a southerly direction to enable this technology to operate efficiently.	<ul style="list-style-type: none"> ✓ Low maintenance. ✓ Easy to integrate into buildings design. ✓ Cost of PV is constantly dropping. 	<p>Yes – The amount of PV installed will be increased as part of the refurbishment process.</p>
		<ul style="list-style-type: none"> ✗ Panels ideally facing south at 30° tilt for optimum efficiency. ✗ Overshadowing will reduce performance. ✗ Can require significant roof space. 	



Technology	Description	Advantages & Limitations	Feasibility
Wind Turbines	Wind generation equipment harness the wind to turn a propeller and in doing so, drive an alternator to generate electricity. The turbines may be pole or roof mounted.	<ul style="list-style-type: none"> ✓ Low maintenance. ✓ Excess electricity can be exported to the grid. ✓ Vertical Axis Turbines can operate at wind speeds as low as 2m/s. ✗ A wind speed of at least 6m/s is typically required for traditional turbines to operate efficiently. ✗ Visual and noise impact risk. 	No – Wind turbines are considered unsuitable for this site due to a poor wind resource and lack of space to locate the turbines. Integrating these systems at height on the roof is not considered feasible due to the associated noise, vibration, and structural stresses upon the buildings. Furthermore, there are planning issues and perceived safety concerns with this technology.
Ground Source Heat Pumps	Ground Source Heat Pumps collect low-grade heat from the ground to supply useful heat for space and water heating requirements. By applying additional energy input (in the form of electricity), it is possible to raise the temperature of the source heat to the temperature required.	<ul style="list-style-type: none"> ✓ Highly tested and efficient technology ✓ Can be used for space and water heating. ✓ Lifespan of 20-25 years. ✗ Excavation works required for buried piping to be installed. ✗ Planning permission potentially required for installation. 	No – This technology is considered unsuitable for this site due to an insufficient area and issues associated with installing a horizontal ground collector and the prohibitive costs and technical constraint of installing vertical boreholes.
Air Source Heat Pump	Air Source Heat Pumps collect low-grade heat from the air to supply useful heat for space and/or water heating requirements. They operate in the same way as a ground source heat pump, by applying additional energy input (in the form of electricity), it is possible to raise the temperature of the source heat to the temperature required.	<ul style="list-style-type: none"> ✓ Can be used for space and water heating. ✓ Highly tested and efficient technology ✓ Low maintenance. ✓ Lifespan of 20-25 years. ✗ Visual and noise impact risk. ✗ Reduced efficiency in cold conditions. ✗ Large outdoor space required for the heat pump unit. 	Yes – The incorporation of air source heat pumps is a feasible option for this development.
Biomass Heating	Biomass boilers typically burn wood chips or pellets as fuel to provide space heating and hot water.	<ul style="list-style-type: none"> ✓ Almost a carbon neutral technology. ✗ Frequent and large fuel deliveries. ✗ Large fuel store required. ✗ Regular maintenance. 	No – This technology is considered inappropriate for this type of development due to the need for a large fuel storage facility.



7. CARBON DIOXIDE EMISSIONS CALCULATIONS

In order to demonstrate the environmental benefits associated with the energy strategy for the proposed development, CWC have carried out Simplified Building Energy Model (SBEM) Assessments using IES Virtual Environment software in order to demonstrate the environmental improvement of the proposed scheme in line with Building Regulations, Part L requirements. The supporting Building Regulation compliance documents (BRUKL) can be found within the appendix of this report.

7.1 Regulated Energy Performance Calculations

Table 7.1 below presents a summary of the results, which show the Building Emission Rate (BER) and (regulated) energy demand performance associated with the proposed energy strategy for the building.

Table 7.1 – Calculated Regulated Building Emission Rates

	58 Mosley Street – Existing	58 Mosley Street - Proposed
Building Emission Rate - BER (kgCO ₂ /m ² /yr.)	10.97	5.09
Building Target Emission Rate - TER (kgCO ₂ /m ² /yr.)	3.23	3.09
Building Primary Energy Rate - BPER (kWh/m ² /yr.)	8.72	54.90
Building Target Primary Energy Rate TPER (kWh/m ² /yr.)	30.36	33.76

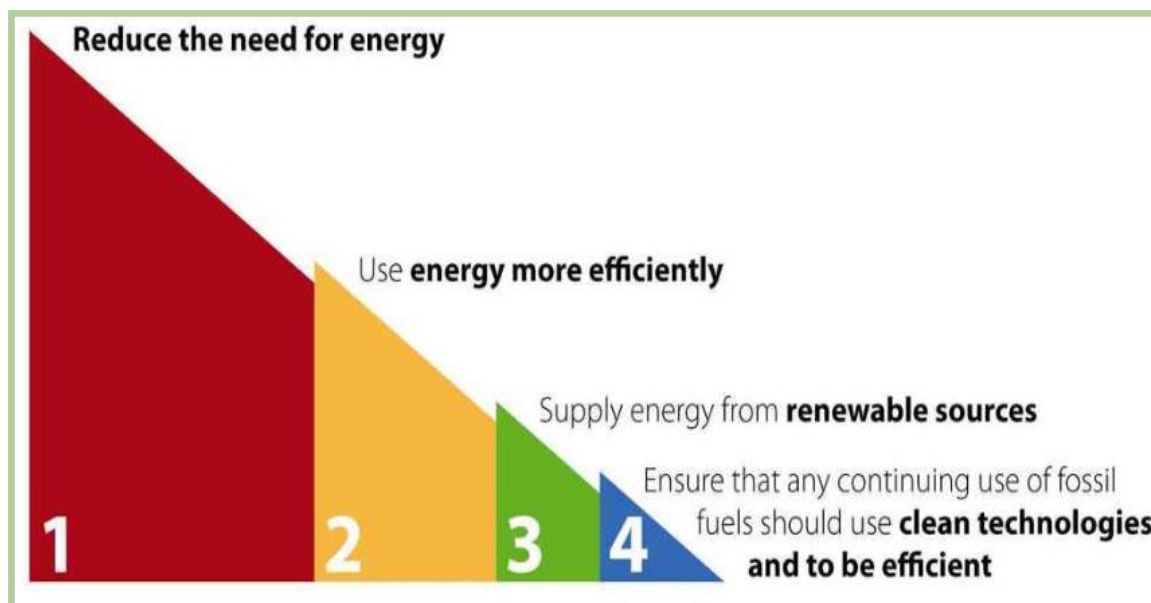
The office block will incorporate an enhanced material specification along with high quality design and construction standards, in order to improve the energy efficiency of the proposed development through a 'fabric led' energy strategy, allied to efficient building services and renewable and low carbon technologies.

The proposed development has the potential to **secure a reduction in the building emission rate and thereby providing a 4.33% improvement upon the current 58 Mosley Street building design.**

7.2 Energy Hierarchy

The Energy Hierarchy has been used as a framework to guide this energy strategy to achieve practical and cost-effective carbon emission reductions. It is intended that the construction, design and specification proposed for this scheme will deliver a building that is inherently efficient and cost-effective during occupation. The hierarchy prioritises such demand-side activities to reduce wastage and improve efficiency (see Figure 7.1).



Figure 7.1 – The Energy Hierarchy

First Principle

The office block will benefit from an enhanced material specification which will include numerous efficiency measures designed to reduce heat losses and minimise energy demand, including:

- ✓ High performance u - values;
- ✓ Low design air permeability target.

This 'fabric led' approach to minimising energy demand and associated carbon dioxide emissions through the performance of the thermal envelope is aligned with the first principle of the energy hierarchy, which states that reduction in energy demand should be achieved initially by energy efficiency.

Second Principle

100% low energy and LED lighting provision and sophisticated control systems for the space and water heating will boost the operational efficiency of the development as per the second principle of the Energy Hierarchy.

Third Principle

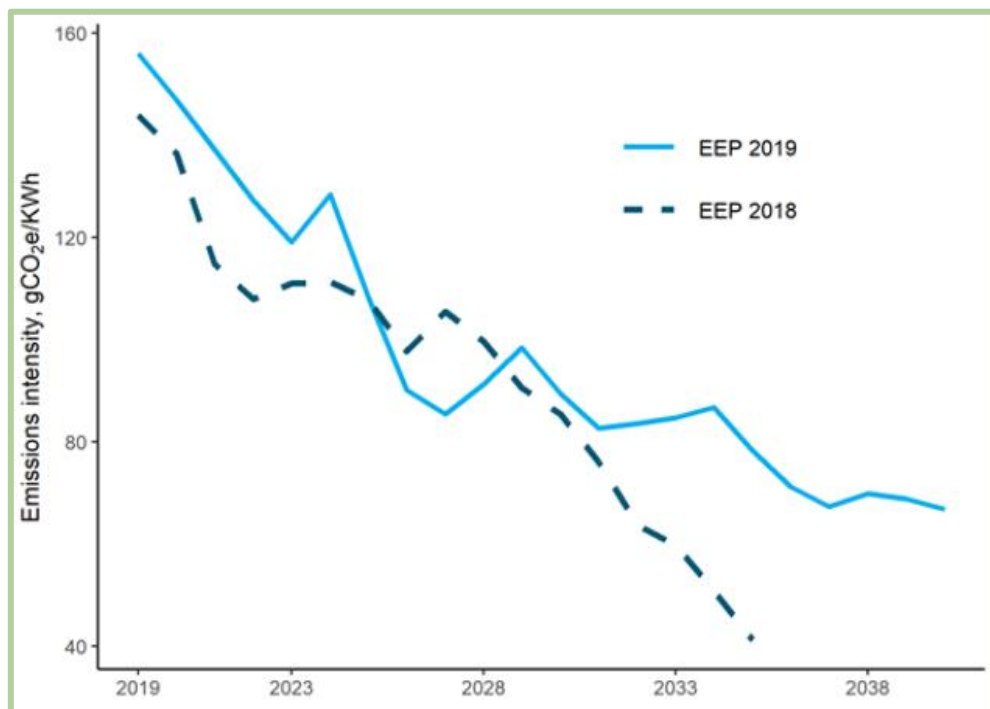
Variable Refrigerant Flow air source heat pumps will be installed to provide a low carbon heating solution as per the third principle of the Energy Hierarchy.

Additional photovoltaic panels will also be introduced to provide renewable energy to the development.

Fourth Principle

In support of this, as the UK electricity grids' CO₂ footprint continues to improve, so too would the carbon dioxide emissions associated with the operational phase of the proposed scheme which benefits from a 'full electric' energy strategy, see Figure 7.2 below.



Figure 7.2 – Energy and Emissions Projections 2020 (BEIS)

8. NABERS

NABERS is a world leading environmental performance rating tool for commercial buildings. Ratings range from one to six stars for offices, and this helps building owners to understand their building's performance versus other similar buildings, providing a benchmark for progress. NABERS Energy ratings therefore form the basis of a robust sustainability strategy and provide fair benchmark for a building's energy efficiency, enabling comparison across the industry.

There are two assessment types available in the UK for office buildings:

- Design for Performance to drive energy-efficient new buildings, and
- NABERS Energy ratings to measure how energy-efficient existing buildings are.

The proposed 58 Mosley Street development will therefore be assessed in accordance with NABERS UK Energy for offices.

Crookes Walker Consulting Limited have produced a NABERS Energy performance assessment for the proposed refurbishment to 58 Mosley Street. The accompanying report can be found within the appendix of this report.

8.1 NABERS Rating

Building simulation and energy estimation has been carried out to communicate the estimated NABERS Energy rating of the proposed RIBA Stage 4a design. Energy simulation and analysis has been carried out in line with the Guide to Design for Performance (DfP) v2.0 and the targeted rating is as follows:

Targeted NABERS Rating = **5 Stars**

Based on the results of the assessment, the modelled scenario indicates that the building has the potential to achieve 5.47 stars. This is 0.8% below the threshold required to achieve a 5.5-star rating and 24.4% above a 5.0-star rating.

However, this is based on the following changes to the current design:

- Increase in PV area by 177m², taking total PV coverage from 370m² to 547m².

Based on the results of the assessment, the modelled scenario indicates that the building has the potential to achieve over 5 Stars. The project team have built in a stage 4/5 design and construction margin of between 16-24.4% to assist in achieving the target.



9. BREEAM PRE ASSESSMENT

BREEAM (Building Research Establishment's Environmental Assessment Method) is the world's leading and most widely used environmental assessment method for buildings.

BREEAM UK Refurbishment and Fit Out 2014 scheme is a performance-based assessment method and certification scheme for non-domestic buildings. The primary aim of BREEAM UK Refurbishment and Fit Out is to mitigate the life cycle impact of buildings on the environment in a robust and cost-effective manner. This is achieved through integration and the use of the scheme by clients and their project team at key stages in the design and construction process.

The building's performance is assessed under a number of categories, including:

- Energy;
- Water;
- Transport;
- Materials;
- Land Use;
- Pollution;
- Health and wellbeing; and
- Management.

The BREEAM rating benchmarks for BREEAM UK Refurbishment and Fit Out projects assessed using the 2014 version of BREEAM are presented in Table 9.1 below.

Table 9.1 – BREEAM Rating Benchmarks

BREEAM Rating	% Score Required
Outstanding	≥ 85
Excellent	≥ 70
Very Good	≥ 55
Good	≥ 45
Pass	≥ 30

There are minimum standards associated with the BREEAM 'Very Good' standard in terms of the building's energy and emission performance. However, to ensure that performance against fundamental environmental issues is not over-looked in pursuit of a particular rating, BREEAM sets minimum standards of performance in key areas e.g. energy, water, materials etc.

A BREEAM 'Very Good' rating requires the following minimum performance standards, see Table 9.2.



Table 9.2 – Mandatory 'Excellent' Standards

Minimum Standards for BREEAM for 'Excellent' rating	Credits
ENE 02: Energy Monitoring	One credit (first submetering credit)
WAT 01: Water Consumption	One credit
WAT 02: Water Monitoring	Criterion 1 only
Mat 03: Responsible Construction Practices	Criterion 1 only

9.1 Potential BREEAM Rating

A BREEAM UK Refurbishment and Fit Out pre-assessment has been prepared for the 58 Mosley Street scheme as detailed below:

BREEAM UK 2014 Refurbishment and Fit Out (Commercial: Offices – Parts 2-3).

- | | |
|--------------------------|----------------------------|
| ✗ Part 1 - Fabric | ✓ Part 3 – Local Services |
| ✓ Part 2 – Core Services | ✗ Part 4 – Interior Design |

The proposed 58 Mosley Street will achieve a BREEAM 'Very Good' rating in response to planning condition 4, but will aspire to achieve a 'Excellent' rating. This will therefore represent the top 10% of UK non-domestic buildings (best practice).

The Assessment, which has been carried out by a qualified licensed BREEAM Assessor, will cover an analysis of the feasible credits and potential BREEAM rating for the building and demonstrates a commitment to the principles of good construction, design and sustainability.

9.1.1 BREEAM Score and Rating

All credits allocated within this BREEAM Pre-Assessment will require further technical verification and additional feasibility assessment during the formal Design Stage and Post Construction BREEAM assessment.

The BREEAM Pre-Assessment (presented in the Appendix of this Statement) shows that the building is expected to perform as follows:

- Indicative building BREEAM score = **73.4%** (*minimum required for BREEAM Excellent = 70%*)
- Indicative BREEAM rating = Potential for **BREEAM 'Excellent' rating**.

Following an initial review of the proposals the BREEAM pre-assessment report demonstrates that the proposed development is able, in principle, to meet all mandatory credit requirements and achieve an overall BREEAM Excellent rating for the 'office' assessment.

Note that a number of assumptions have been made within this initial appraisal which will require confirmation by means of further technical input during the formal assessment, once the design and specifications are finalised. The approach to achieving the target BREEAM rating may therefore, be subject to change further into the development cycle.



10. CLIMATE CHANGE EMERGENCY

On 10th July 2019, a motion asking Manchester City Council (MCC) to formally declare a **climate emergency** was unanimously agreed. In support of this, the developer wishes to highlight the following measures that will form part of the specification of this development:

- An energy strategy that exceeds Building Regulations, Part L Approved Document Volume 2 (2021), in relation to reducing carbon emissions and minimising energy consumption;
- The proposed strategy will also improve upon standards targeted within **Manchester Core Policy EN6 - Target Framework for CO₂ Reductions from Low or Zero Carbon Energy Supplies** which relates to Building Regulations Part L 2010.
- A site waste management plan (SWMP) will be produced by the developer to limit the on and off-site environmental impacts of construction waste.
- The development will be designed to incorporate features that will serve to reduce energy demand, and in turn, carbon emissions arising from access to the building:
 - Variable refrigerant flow air source heat pumps;
 - MVHR; and,
 - LED lighting.
- The site is well located to encourage trips to be made on foot, by bike or via public transport. This is facilitated by:
 - Bus stop being accessible along Charlotte Street;
 - The nearest tram stop is St Peters Square, which can be accessed within a two-minute walk;
 - Manchester Oxford Road can be accessed via a short cycle or within a ten-minute walk; and,
 - The incorporation of thirty-four cycle parking spaces;

These commitments, in combination, seek to work towards the carbon reduction target of no more than 1.5°C global temperature increase and assist the council in meeting their Climate Change Emergency objectives.



11. CONCLUSION

This Statement has reviewed the sustainability performance of the proposed 58 Mosley Street development against national and local planning policies. The conclusions that may be drawn from the review are as per the following:

Sustainability Performance –

- The scheme will achieve a **BREEAM rating of 'Very Good'** with an expected score of **73.4%**.
- This scheme promotes access to sustainable modes of transport which will contribute towards creating a highly connected and sustainable development in accordance with Manchester Core Policy T1 – Sustainable Transport.
- The site is in an area at low risk from flooding, with it being **located within a Flood Risk Zone 1** in accordance with Manchester Core Policy EN14 – Flood Risk.
- Waste arising during construction will be minimised through the **implementation of a Site Waste Management Plan (SWMP) in accordance with Manchester Core Policy EN19 - Waste**. The SWMP will be used to ensure that there is adequate management, and that storage of construction waste takes place in line with the Council's policies. Opportunities for the possible recycling of construction from excavation works will also be considered.
- **A Refuse Management Strategy** will be developed to manage waste and recyclables from the operational phase of the development. Source segregation will encourage the individuals to recycle and **divert waste away from landfills**.
- **Materials with low environmental impact** will be selected and local suppliers will be prioritised where possible, and there will be inherent savings in embodied carbon associated with new construction materials as a result of the refurbishment of the existing office building in accordance with Manchester Core Policy EN4 - Reducing CO₂ Emissions by Enabling Low and Zero Carbon Development.
- **A whole life cycle assessment has been conducted** to assess the environmental impact associated with the proposed fit out.

Energy Strategy –

The scheme will be designed and specified in accordance with **the principles of the energy hierarchy** and Building Regulations, Part L and **Manchester City Council**:

- The proposed scheme is aiming to achieve a **NABERS 5-star rating**.
- The proposed material and mechanical specification will **provide various benefits** including **upgraded thermal insulation**, efficient mechanical servicing, and low energy lighting.
- The scheme will integrate **efficient air source heat pumps** and MVHR system in order to limit the carbon emissions arising from the scheme.

Furthermore, the proposals accord with the aims of the National Planning Policy Framework, as follows:



- The **re-use of the piece of land** will provide a development that inherently supports **sustainable design with access to local amenities and sustainable modes of transport**. The reuse of the site is also an efficient use of land and resources;
- **Refurbishment practices that minimise adverse impacts on the environment** will be adhered to including a waste management strategy to reduce the quantity of waste generated, and to increase re-use and recycling, a commitment will be made to minimise waste and pollution.

In conclusion, the proposed development will deliver a quality development that accords with the guidance provided within Manchester Core Strategy as well as national planning and regulatory standards.

