

Environmental Standards Statement

8 and 8A St John Street

Anthony and Callum Ford

June 2025

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Client

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1. Introduction

1.1 Introduction

This Environmental Standards Statement ('ESS' or the 'Statement') has been prepared by Turley Sustainability on behalf of Anthony and Callum Ford (the 'Applicant') in connection with a full planning application and associated application for listed building consent for the conversion, alteration and extension of Nos. 8 and 8a St John Street (the 'Site') and the construction of a new build dwelling to the rear (the 'Proposed Development').

The Statement demonstrates the range of positive measures incorporated into the proposals to ensure environmental sustainability performance in accordance with national and local policy objectives.

1.2 Application Site & Surroundings

The application site (**Figure 1**) is situated in Manchester City Centre. It is a rectangular plot of land, approximately 0.045ha, located on the corner of St John Street, Longworth Street and Artillery Street.

The site currently comprises of two three-storey Grade II Listed Buildings and forms the end terrace block / corner block between St John Street and Longworth Street.

The buildings on site were originally townhouses which were converted, including rear extensions, in the late 18th Century, with the buildings currently being used as office space.

There is an external courtyard to the rear which forms the corner of Longworth Street and Artillery Street and is used by those accessing 8 and 8a St John Street. The site previously included several birch and sycamore trees bound by rail fencing, however these have been removed under planning application reference 127944/FO/2020.

1.3 Proposed Development

The planning description is as follows:

"Change of use from offices (E(g)) to residential accommodation comprising of two four-bed dwellings (C3) including the demolition of existing outriggers and the erection of a replacement rear extension; and the erection of new four-bed residential dwelling (C3) at the rear of the existing property".

Figure 2 overleaf provides an illustration of the proposed development.

1.4 Document Structure

Chapter 2 of the ESS sets out national legislation and policy context, and local policy for Greater Manchester Combined Authority and Manchester City Council.

Chapter 3 sets out the sustainability benefits of the scheme, in line with the requirements of local policy.

Appendix 1 presents the Energy and Carbon Proforma for small minor residential development, as required under latest policy guidance.

Figure 1: Site Location



Figure 2: Illustration of Proposed Development (Tim Groom Architects)



2. Planning Policy Context

2.1 National Policy and Guidance

This section sets out a summary of current national guidance and policy in relation to sustainable development.

2.1.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF)¹ provides a framework for the development of locally prepared plans and the government's planning policies for England and how these are expected to be applied.

Paragraph 8 outlines the environmental objective of the Framework which includes mitigating and adapting to climate change and moving to a low carbon economy.

Paragraph 161 similarly confirms that the planning system should support the transition to a low carbon future in a changing climate, including providing support to proposals which contribute to radical reductions in greenhouse gas emissions and encourage the reuse of existing resources, as well as the development of low carbon energy.

Paragraph 164 expects new development to be planned for in ways that avoid increased vulnerability to the range of impacts arising from climate change, ensuring that suitable adaptation measures are provided where development is located in a vulnerable area.

Paragraph 166 of the Framework states that new development should:

- Comply with adopted Local Plan policies on local requirements for decentralised energy supply unless it can be demonstrated by the applicant, having regard to the type of development involved and its design, that this is not feasible or viable; and
- Take account of landform, layout, building orientation, massing and landscaping to minimise energy consumption.

Paragraph 167 states that LPAs should prioritise supporting energy efficiency and low-carbon heating improvements, such as installing heat pumps and solar panels, for both domestic and non-domestic buildings.

The NPPF recognises the role planning has to play in support of the UK's pursuit of the United Nations Sustainable Development Goals (UNSDGs) which address social progress, economic wellbeing and environmental protection².

Figure 3: Example UN Sustainable Development Goals



¹ [UK Government | NPPF](#)

² [UN Sustainable Development Goals](#)

2.1.2 Planning Practice Guidance

Planning Practice Guidance (PPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.

PPG is a material consideration in planning decisions and should generally be followed unless there are clear reasons not to. It sets out how local authorities should include policies that protect the local environment and strategies to mitigate and adapt to climate change and supports developments that are functional and adaptable for the future.

2.1.3 Building Regulations

Part L, Conservation of Fuel and Power – In 2022, the building regulations were updated as an interim step towards part of the roadmap to the ‘full’ Future Homes and Buildings Standard.

In 2023 the Government published the Future Homes Standard (FHS) and Future Buildings Standard (FBS) consultation which provided further details on fabric and energy efficiency, and renewable energy generation.

The FHS is expected to come into force in 2026 and will require homes to achieve a c.75-80% reduction in carbon emissions beyond Part L 2013. Homes will be ‘zero-carbon ready’, meaning that they will need no retrofitting to produce zero carbon emissions as the electricity grid decarbonises.

Part S, Infrastructure for Charging Electric Vehicles³

- Part S sets out guidance for electric vehicle (EV) charging infrastructure. For residential development, EV charge points must be provided for each dwelling (or where the total number of parking spaces is less than each dwelling, all spaces should be provided with an active EV charging

point). Any remaining spaces must have cable routes for charge points to be installed.

Part O, Overheating - Part O sets out new requirements for mitigating overheating in residential buildings, specifying that residential developments must limit unwanted solar gains in the summer and provide means to remove heat. Compliance with Part O can be demonstrated using two methods, either following a simplified prescribed glazing and free area ratio or using Dynamic Simulation Modelling to demonstrate the risk of overheating from rising summer temperatures has been mitigated.

2.1.4 UKGBC Framework

The UK Green Building Council’s (UKGBC) Net Zero Carbon Buildings Framework⁴ sets out high-level principles for achieving net zero carbon for construction and net zero carbon for operational energy within both homes and non-domestic buildings. Buildings can also be referred to as ‘net zero ready’ where they are able to meet net zero in operation should the occupiers purchase renewable energy.

The framework includes the following definitions:

Net Zero Carbon in Operation - When the amount of carbon emissions associated with the building’s operational energy on an annual basis is zero or negative. A net zero carbon building is highly energy efficient and powered from on-site and/or off-site renewable energy sources, with any remaining carbon balance offset.

Net Zero Carbon in Construction - When the amount of carbon emissions associated with a building’s product and construction stages up to practical completion is zero or negative, through the use of offsets.

³ [Approved Document S: Infrastructure for the charging of electric vehicles \(publishing.service.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/115448/Approved_Document_S_-_Infrastructure_for_the_charging_of_electric_vehicles.pdf)

⁴ [Net Zero Carbon Buildings Framework - UKGBC - UK Green Building Council](https://www.ukgbc.org/net-zero-carbon-buildings-framework)

The UKGBC does not include specific embodied or operational targets, however users are encouraged to align with ‘science based’ targets.

2.1.5 Environment Act 2021

The Environment Act 2021⁵ aims to improve air and water quality, protect wildlife, increase recycling and reduce plastic waste. It explicitly makes biodiversity net gain (BNG) a condition of planning permission by requiring all new developments in England to provide a 10% BNG.

2.2 Local Planning Policy

Greater Manchester and Manchester City Council planning policy relating to sustainable development, energy and climate change is summarised below.

2.2.1 Places for Everyone

In March 2024, nine Greater Manchester (GM) councils adopted Places for Everyone (PfE) Joint Development Plan Document.⁶ All policies within the plan are ‘strategic policies’ and local plans will need to be consistent with it and neighbourhood plans will need to be in general conformity with the strategic policies. The key sustainability, energy and climate change policies are summarised below:

Policy JP-S1 Sustainable Development: The policy reiterates GM’s Vision to be at the forefront of action on climate change and includes a commitment to be carbon neutral by 2038. This commitment provides the basis for the other energy and carbon related policies in PfE.

The policy sets an expectation that development will apply a net zero carbon approach to operational emissions up until 2028, thereafter emissions in construction should be considered. Policy JP-S2 below then clarifies expectations in terms of meeting net zero in operation and construction.

Until FBS comes into force, the PfE policy will follow its trajectory in relation to carbon reduction with applicants demonstrating how savings have been

maximised following the energy hierarchy. From 2025, applicants will need to demonstrate carbon reductions have been maximised with an opportunity to offset any residual carbon to a carbon offset fund. The approach will be reviewed in line with future standards as they are introduced and is reliant on the Councils setting up an offset fund.

Table 1 sets out the requirements for residential development from 2025.

Table 1: Best Practice Thresholds

Space Heat Demand	Hot Water Energy Demand	Renewable Energy Generation Targets
Houses 20kWh/m ²	As above	PV – 40% ground floorspace
Flats 15kWh/m ²		

Policy JP-S2 Carbon and Energy: The policy supports delivering a carbon neutral GM through the following measures:

- Promoting the retrofitting of existing buildings;
- Promoting the use of life cycle cost and carbon assessment tools;
- Taking a positive approach to renewable and low carbon energy schemes;
- Increasing the range of nature-based solutions;
- An expectation that new development will, unless it can be demonstrated that it is not practicable or financially viable:
 - a) Be net zero carbon:
 - From adoption - to regulated operational carbon emissions

⁵ [Environment Act 2021](#)
⁶ [Places for Everyone Joint Development Plan Document \(2024\)](#)

- From 2028 – to all emissions ‘in construction’.

From 2025 development should also calculate and minimise carbon emissions from unregulated emissions alongside regulated emissions, in line with the energy hierarchy.

From 2025 any residual carbon emissions that cannot be fully mitigated on-site should be offset. As an interim measure, development should be consistent with the Part L building regulations introduced in 2022, unless superseded.

Footnote 29 within PfE states that net zero carbon is defined by the UKGBC Framework (see **Section 2.1.4**).

- Incorporate adequate electric vehicle charging points, in line with Part S of the building regulations, unless superseded by relevant Local Plan policies.
- Prioritise connection to a renewable energy/heating/cooling network in the first instance or a low carbon network that is adaptable to non-fossil fuels at a later date.
- In residential developments, achieve energy demand reductions in terms of space heat demand; hot water energy demand and the delivery of on-site renewable energy generation, in accordance with the Best Practice Thresholds set out in Policy JP-S1.
- Include a detailed energy statement to demonstrate how the development has sought to maximise reductions in carbon emissions in line with relevant policy targets, including the minimisation of overheating risks and appropriate measures for post occupancy evaluation. Whole life cycle emissions should be considered where possible.

Policy JP-S4 Flood Risk and the Water Environment:

Developments are expected to manage surface water runoff through sustainable drainage systems and as close to source as possible.

Sustainable drainage systems should:

- Be designed to provide multifunctional benefits wherever possible, including for water quality, nature conservation and recreation;
- Avoid adverse impacts on water quality and any possibility of discharging hazardous substances to ground;
- Be delivered in a holistic and integrated manner, including on larger sites split into different phases; and
- Be managed and maintained appropriately to ensure their proper functioning over the lifetime of the development.

As a minimum, residential development should meet the mandatory water efficiency standard of 125 litres/person/day as set out in Building Regulations, unless tighter water efficiency standard of 110 litres/person/day is set by local authorities.

Policy JP-S6 Resource efficiency: The policy requires using sustainable design and construction techniques to reduce carbon emissions, adapt and future proof to the impact of climate change, reduce and recycle waste and minimise water use.

Policy JP-G8 Net Enhancement of Biodiversity and Geodiversity: Through a range of measures, a net enhancement of biodiversity and resources will be sought.

Development is expected to follow the mitigation hierarchy to avoid harm to biodiversity and compensate for any harm caused. A measurable net gain of 10% should be achieved.

2.2.2 Net Zero Design Guidance

In March 2025 the GMCA published three guidance documents and a proforma⁷ to support the implementation of the energy and carbon policies in Places for Everyone. The guidance includes:

- Design Guidance for Net Zero - guidance for applicants on how to design to achieve net zero carbon buildings.
- Low carbon heat - guidance for applicants on how to deliver heating systems which are low carbon, cost effective and affordable.
- Submission guidance for Places for Everyone policies JP-S2 and JP-S3.
- An energy and low carbon proforma (excel spreadsheet) to demonstrate compliance with the policy when submitting energy statements to the Local Planning Authority.

An overview of each of these documents is provided below.

Design Guidance for Net Zero

This document sets out design considerations for residential and non-residential buildings to meet policy JP-S2 and JP-S3. It reiterates that net zero is defined by the UKGBC Net Zero Carbon Buildings Framework, and provides the following principles to achieve this:

- Minimise energy demand: achieve the space heating demand limits through energy efficient fabric and ventilation.
- Maximise energy efficiency: meet the total energy use (regulated and unregulated), through low carbon and energy efficient heating systems.
- Use renewable energy: maximise the generation of on-site renewable energy. There should be a balance between predicted annual

energy use and annual renewable energy generation.

- Use low carbon energy: the building must not connect to the gas network or, more generally, use fossil fuels through a heat network. Low carbon heating systems must be installed.
- Reduce overheating risk: assess the risk of overheating and minimise it through window design and shading strategies.
- Minimise embodied carbon: embodied carbon should be minimised through efficient design and low carbon material selection. The building should meet the upfront embodied carbon benchmarks and the highest carbon materials used should be reported.
- Offsets: following the implementation of the above steps, financial contributions are the last step to offset the remaining emissions/energy. The decision to include offsetting will be determined by each local authority.

Guidance is provided for applicants to design energy efficient and low carbon buildings, including considerations such as form factor, positioning of unheated facilities, ventilation, and building fabric.

Metrics and key performance indicators (KPIs) are provided for small minor residential applications including:

- Solar PV installed to at least 40% ground floor space
- Fossil fuel free
- Thermal comfort in line with an overheating risk assessment tool

For small minor residential applications, there is no KPI or target for space heating demand, energy use intensity, or upfront embodied carbon and no requirement for carbon offsetting.

⁷ [GMCA Net Zero Guidance](#)

Low Carbon Heat

This guidance document provides applicants with further information on how to deliver low carbon heating systems in line with policies JP-S2 and JP-S3.

It confirms that gas-fired heating systems are not compatible with achieving net zero carbon buildings and recommends the use of all-electric heating systems such as heat pumps.

Further detail is provided around heat and energy network opportunity areas in Greater Manchester, and the guidance confirms that the identification of heat network zones will be finalised in 2025.

Submission Guidance

This document sets out the requirements for different types of applications including pre-app, outline, and detailed, to meet the requirements of policies JP-S2 and JP-S3.

2.2.3 Manchester Core Strategy Development Plan Document (2012)

Manchester's Core Strategy (2012)⁸ is the key document in the Manchester Local Plan. It sets out the long-term strategic policies for Manchester's future development and forms the framework against which planning applications are assessed.

An addendum to Manchester Core Strategy was issued in 2024⁹ listing where policies have been partially replaced by Places for Everyone. This addendum has been addressed in the below policy summaries.

Policy EN4 Reducing CO₂ emissions by enabling low and zero Carbon Development: Development must meet PfE Policy JP-S2 and consider the following principles:

- Be located and designed in a manner that allows advantage to be taken of opportunities for low and zero carbon energy supplies where possible;

- Where possible new development and retrofit projects will be used as a mechanism to help improve the energy efficiency and where possible provide low and zero carbon energy to existing buildings;
- Where appropriate, new development and retrofit projects are encouraged to connect to and/or make commitments to low or zero carbon energy schemes and/or to incorporate provision to enable future connection to any existing/potential decentralised energy networks; and,
- Use of building materials with low embodied carbon in new development and refurbishment schemes.

Policy EN6 Target framework for CO₂ reductions from low or zero carbon energy supplies: Development must meet PfE Policy JP-S2. An Energy Assessment is required to be submitted, and developers are permitted to use green infrastructure elements to contribute to the carbon reduction requirements provided adequate evidence is provided.

Policy EN8 – Adaptation to Climate Change – All new development is expected to be adaptable to climate change and developments should have consideration of adaptation measures including:

- Meeting PfE Policies JP-S2, JP-S4, and JP-G8;
- Reducing the urban heat island effect through green infrastructure; and,
- Minimising overheating through passive design.

Policy EN9 - Green Infrastructure: New development is expected to maintain existing green infrastructure in terms of its quantity, quality and multiple function. Developers are also encouraged to enhance existing green infrastructure where possible.

⁸ [Manchester's Core Strategy \(2012\)](#)

⁹ [Addendum to Manchester Core Strategy \(2024\)](#)

Policy EN 14 - Flood Risk: Development should be directed away from sites at the greatest risk of flooding, and towards sites with little or no risk of flooding. Development should meet PfE Policy JP-S4.

Policy EN15 – Biodiversity and Geological Conservation: The Council will seek to maintain or enhance sites of biodiversity and geological value throughout the City. Development should meet PfE Policy JP-G8.

Policy EN16 - Air Quality: The Council will seek to improve the air quality within Manchester. Developers will be expected to take measures to minimise and mitigate the local impact of emissions from traffic generated by the development. Development should meet PfE Policy JP-S5.

Policy EN 17 - Water Quality: New development should avoid adverse impact on water quality, including during the construction phase, and minimise surface run-off. Development should meet PfE Policy JP-S4.

Policy DM1 - Development Management: All new development should have regard to a range of sustainability issues including site location, accessibility, waste management, biodiversity and flood risk, as well as incorporating sustainable construction techniques.

2.2.4 Validation Requirements

Manchester City Council Validation Checklist (January 2020) requires applications for major new development to be accompanied by an Environmental Standards Statement to address the sustainability of the development proposals.

2.2.5 Local Plan Issues Consultation

Manchester City Council Local Plan Issues Consultation (February 2020)¹⁰ explains how the new Local Plan will contribute to a zero-carbon city by providing the spatial expression in support of the Council's intention to move towards a zero carbon Manchester by 2038 at the latest. The Issues

Consultation covers a range of issues that will have a direct bearing on successfully meeting the zero-carbon challenge by 2038.

2.2.6 Manchester Climate Change Framework 2020-25

The Manchester Climate Change Framework 2020-25¹¹ responds to Manchester City Council's declaration of a climate emergency in July 2019 and target to be net zero by 2028.

The Framework sets the following objectives to be met by 2025:

Objective 1: Staying within our carbon budgets – Including reducing CO₂ emission from our homes, workplaces and ground transport by at least 50% during 2020-25.

Objective 2: Climate adaptation and resilience – Adapting the city's buildings, infrastructure and natural environment to the changing climate.

Objective 3: Health and wellbeing – Improving the health and wellbeing of everyone in Manchester through actions that also contribute to our climate change mitigation and adaption objectives.

Objective 4: Inclusive, zero carbon and climate resilient economy – Ensuring Manchester establishes an inclusive, zero carbon and climate resilient economy where everyone can benefit.

The framework was updated in October 2022 to present the findings of detailed modelling undertaken to assess the city's carbon budget, provide an overview of progress against the framework so far, and recommend actions for the transition to a zero carbon and climate resilient city. Key recommendations include:

- Ensure new buildings are constructed to high standards of low carbon performance covering operational and embodied energy.
- Produce goods and services more sustainably, moving to a circular economy, alongside becoming more sustainable consumers.

¹⁰ [Local Plan Issues Consultation](#)

¹¹ [Manchester Climate Change Framework](#)

- Reduce waste, including unnecessary food waste, and manage unavoidable waste as sustainably as possible, maximising reusing and recycling.

2.3 Planning Policy Summary

Both local and national policy aims to ensure the delivery of sustainable and well-designed buildings which mitigate and adapt to the impacts of climate change.

Places for Everyone policy requires development to be net zero in operational carbon from 2025 in line with the UKGBC Framework (meeting building regulations as an interim measure). The Net Zero Design Guidance sets out how this can be achieved and sets out several targets and KPIs representing best practice.

Ensuring the development is resilient to a changing climate is a further key requirement at both national and local levels, particularly in relation to increased risk of floods and summertime overheating.

3. Sustainability Strategy

3.1 Introduction

This chapter summarises the sustainability, energy and climate change measures that are proposed. It broadly follows the topic headings of Chapter 4 'Environmental Standards' of the Guide to Development in Manchester Supplementary Planning Document and Planning Guidance (2007) and includes:

- Energy and Carbon Statement
- Environmental Design;
- Water Management & Weather Resilience;
- Waste Management;
- Construction Management; and
- Biodiversity.

3.2 Energy and Carbon Statement

The Energy Compliance Strategy for the Proposed Development has been prepared by Crookes Walker Consulting (CWC) and is submitted separately to support the application. The following summary is based on preliminary energy modelling and strategy completed to date and may be subject to change as part of detailed design.

The section is presented in line with the GMCA Net Zero Design Guidance and submission guidance for small minor development.

3.2.1 Building Fabric and Ventilation

Reducing the energy demand of a building can be achieved through the performance of building fabric, which considers heat loss, solar gain, and building orientation.

This 'fabric first' approach has benefits, including:

- Carbon savings delivered are 'locked-in' for the lifetime of the building (60 years or more) rather than the much shorter lifespan (around 25 years) of a renewable energy technology.
- Virtually no maintenance and/or replacement costs to maintain carbon reductions through improved fabric.
- Less reliance on an occupier's behaviour to deliver carbon reductions.

The Energy and Carbon Proforma (**Appendix 1**) provides KPIs and metrics for building fabric and ventilation. The Applicant has acknowledged these targets and will strive to meet them where feasible and viable. An overview of each design measure to minimise energy demand is provided below, with further details provided within the Energy Compliance Strategy submitted separately.

Building Form - The building form of the existing building is fixed as part of the proposed retrofit. The new build element proposes a relatively simple form of two storeys. The massing evolution shown in the Design and Access Statement demonstrates that the form has remained as simple as possible whilst incorporating external amenity features such as a courtyard garden.

Elevations and Windows - Windows in the new build element have been sized and orientated to balance heat gain, heat loss and internal daylight. Natural light has been maximised through rooflights and double height spaces.

Heated and Unheated Spaces - The design of the new building has grouped unheated areas such as the garage with minimally occupied spaces such as the utilities room, entrance, and WC to avoid heat wastage.

Building Fabric Specification and Air Tightness - The building fabric performance proposed for the new

building will exceed the minimum values within Part L 2021, as shown in **Table 2**. Please note that the proposed values are subject to ongoing design and construction.

Table 2: Proposed Building Fabric Specification

	Part L 2021 Minimum Values	Proposed Values for the New Build
External Wall	0.26 W/m ² K	0.11 W/m ² K
Windows / Doors	1.6 W/m ² K	1.3 W/m ² K
Roof	0.16 W/m ² K	0.12 W/m ² K
Ground Floor	0.18 W/m ² K	0.12 W/m ² K
Air Permeability	8 m ³ /hr/m ² @50Pa	3 m ³ /hr/m ² @50Pa

Ventilation - It is proposed that each dwelling is provided with a 'mechanical ventilation with heat recovery' (MVHR) unit. Using MVHR, circa 85% of the heat extracted from bathrooms and kitchens can be captured (during colder months) and used to heat the incoming supply air. As such this is a very energy efficient solution relative to alternative solutions such as local fan ventilation.

3.2.2 Maximise Energy Efficiency

Once energy demand has been minimised through the building fabric and ventilation, the remaining energy demand should be met as efficiently as possible by specifying energy efficient building services and equipment.

The Proposed Development includes the following to minimise energy demand:

- Low energy internal lighting (e.g. LED) installed throughout the dwellings.
- Energy and water efficient white goods.
- A metering strategy which allows the occupants to easily monitor ongoing energy usage to adapt and better manage consumption.

3.2.3 Renewable Energy Generation

The sections above explain how energy demand has been minimised in line with local policy requirements. To further reduce carbon emissions, renewable energy generation is proposed as part of the development.

The current proposed solution for the new building is to provide space heating and hot water using air-to-water heat pumps. Heat pumps are highly efficient and provide low carbon heat sourced either from the ground, water, or, in this case, air.

The relatively minimal maintenance, efficiency and capital cost of an ASHP system means that it is suitable for incorporation into the new building. The heat pumps will draw from grid electricity and deliver carbon savings due to the increasing amount of renewable in the UK power generation mix.

Solar PV is proposed on the new build dwelling to further reduce carbon emissions. An area of 65m² has been allocated for the panels, which equates to 42% of roof space. Due to heritage constraints, solar PV is not proposed on the existing buildings.

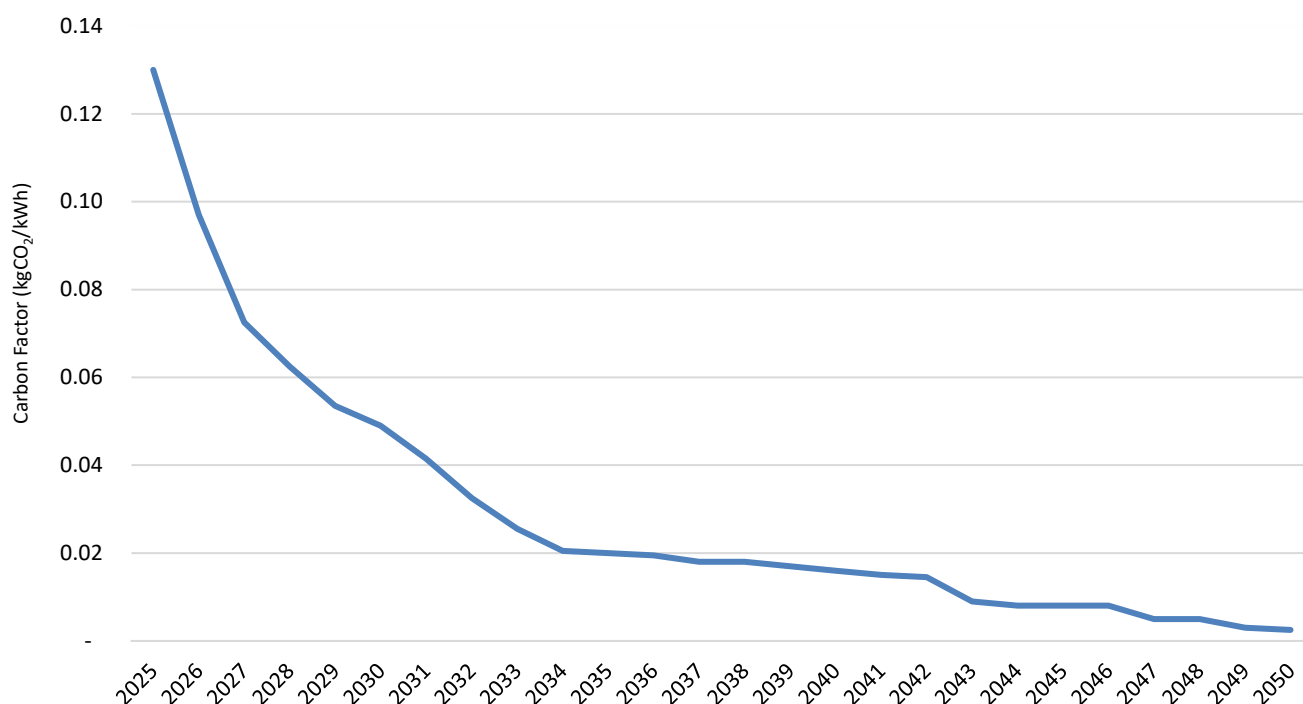
3.2.4 Low Carbon Heating

As detailed above, space heating and hot water will be delivered to the new build element by air-to-water heat pumps to deliver substantial savings in carbon emissions.

This 'all-electric' and fossil fuel free approach means that the dwelling will be futureproofed to be net zero carbon in operation, either through an appropriate renewable energy tariff, or the ongoing decarbonisation of the UK power generation mix (as shown in **Figure 4**).

The detailed design of the retrofit has not yet been completed; however a fossil-fuel free space heating and hot water system will be prioritised subject to feasibility and viability. The effectiveness of an all-electric strategy will be dependent on the performance of the retained façade and windows, and possible enhancements to these elements.

Figure 4: Projected Power Grid Decarbonisation



3.2.5 Overheating Risk

With increasing summer temperatures there is an increasing risk of overheating in homes which could adversely affect the occupants.

A dynamic thermal model will be undertaken to assess the risk of overheating as defined within Part 'O' of the Building Regulations, to ensure comfortable and sustainable design environments are in place.

The homes will reduce potential overheating by minimising heat generation first, followed by the consideration of passive cooling measures, and finally the use of active cooling using the lowest carbon option.

Incorporating this hierarchy into the design process means that the homes will be better equipped to manage their cooling needs and to adapt to and mitigate climate change, while also minimising the carbon emissions associated with reducing overheating risk.

3.2.6 Materials

The most effective way to reduce the embodied carbon impact of development is through lean design and material efficiency to reduce the total amount of materials used. The refurbishment of the existing building at St. John Street is an inherently sustainable and resource efficient approach, with the potential to significantly reduce the embodied carbon emissions associated with development.

For the new building, the primary external wall material is brick, a sustainable and relatively low carbon material due to its durability and lack of maintenance / replacement required throughout a building's lifetime. Brick is entirely recyclable at end of life, further reducing the lifecycle carbon emissions.

Additional considerations will include increasing the recycled content within metal and plasterboard products, and specification of hardwearing and durable floor finishes to reduce replacement emissions.

Construction materials and products will be procured locally where possible, to reduce emissions associated with transport of materials to site. Construction site emissions will also be reduced where possible, through minimising diesel usage in generators and machinery.

3.2.7 Energy and Carbon Reduction Summary

This section has demonstrated how the new build element of the Proposed Development has addressed the GMCA Net Zero Design Guidance through:

- Building fabric specification which improves minimum values within Part L 2021.
- Maximising energy efficiency through MVHR, low energy lighting, and energy efficient white goods.
- A fossil fuel free space heating and hot water strategy using air-to-water heat pump.
- 42% roof space allocated for Solar PV panels.
- A metering strategy which allows the occupants to easily monitor ongoing energy usage to adapt and better manage consumption.
- Reducing overheating risk through dynamic thermal modelling.
- Consideration of sustainable and low carbon, local building materials to reduce embodied carbon emissions.

The detailed energy strategy of the existing building retrofit is ongoing; however a fossil-fuel free space heating and hot water system will be prioritised subject to feasibility and viability. Additionally, retrofit of an existing building significantly reduces carbon emissions associated with building materials, compared with demolition and new build.

Furthermore, the location of the site provides an opportunity to maximise sustainable travel options including walking / cycling and public transport in preference to the private car. This approach will deliver further carbon emission reductions whilst

promoting the health and wellbeing of occupants through active travel.

3.3 Environmental Design

The Guide to Development in Manchester SPD states that new residential development from the year 2016 onwards should achieve Code for Sustainable Homes Level 6. The Code for Sustainable Homes was withdrawn in 2015 and so this does not apply to the Proposed Development.

Instead, the proposed development will comply with policies of Places for Everyone to demonstrate environmental design.

3.4 Water Management & Weather Resilience

Water management and weather resilience issues in new development are becoming increasingly important as a result of climate change, with effects such as increased winter rainfall, decreased summer rainfall and increased summer temperatures already being experienced.

The Met Office's latest UK Climate Projections (UKCP18) include significant changes to climatic conditions in Manchester by the 2050s, including increased summer temperatures of 2.4°C, 7% more winter rainfall, and 19% less summer rainfall.

A summary of key potential risks faced by Manchester and associated mitigation measures is provided below.

3.4.1 Flood Risk

PfE Policy JP-S4 expects developments to manage surface water runoff through sustainable drainage systems and as close to source as possible.

The Site is within Flood Zone 1, with very low risk of flooding from fluvial sources. The Drainage Strategy prepared by Hydrock demonstrates that the Proposed Development achieves a 50% betterment on the existing brownfield runoff rates. The model indicates that no flooding occurs during a 1 in 100 year plus climate change event within the surface

water network. The existing building will reutilise the existing drainage infrastructure.

Several approaches to sustainable drainage systems (SuDS) have been considered as part of the strategy. A green roof is proposed which will have several additional sustainability benefits including biodiversity and reducing overheating. Additionally, below ground attenuation systems have been incorporated within the design, through the use of attenuation crates.

3.4.2 Potable Water Efficiency

Potable water is an increasingly important natural resource and with the majority of the UK classed as being in an area of moderate or severe water stress the conservation of water is becoming a more significant sustainability metric.

The new development will aim to reduce water consumption through a range of water efficiency measures such as:

- Dual and/or reduced flush WCs.
- Easily accessible and readable water meters to allow building occupants to manage and adapt water consumption.
- Water efficient white goods.

The dwellings will target a water consumption rate of 125 l/p/d in line with PfE Policy JP-S4 requirements.

These measures will help ensure the Proposed Development reduces demand on local potable water supplies and therefore promote resilience to potential water constraints such as summer droughts.

3.5 Waste Management

Prior to the commencement of construction, a Site Waste Management Plan (SWMP) will be developed providing details on how waste will be segregated and processed. Measures proposed will incorporate principles of circular economy and reduce the

embodied carbon associated with 'end-of-life' of materials.

The reduction, reuse and recycling of construction waste is to be prioritised through measures such as avoidance of over-ordering, supervision of deliveries, use of secure materials storage facilities and reuse of materials onsite where feasible.

For the management of operational waste, an area for four bins has been allocated within the rear garden of each dwelling. The location of each of these is close to the rear kitchen door of each of the properties for ease of access.

This provision is in line with Manchester City Council's Waste Storage and Collection Guidance for New Developments. The existing building at present is used as offices with the refuse currently deposited along Longworth Street on bin collection day. This strategy will remain as it is with residents depositing bins along Longworth Street for waste collection vehicles to stop and collect

3.6 Construction Management

The Proposed Development will ensure that construction minimises waste and environmental impact on the surrounding area through implementation of best practice pollution prevention policies and procedures on-site.

The development will consider registration with the Considerate Constructors Scheme to demonstrate high levels of construction management and reduction of impacts on neighbouring properties and occupants.

3.7 Biodiversity

An Ecological Impact Assessment undertaken by Ecus in July 2024 has established the existing ecological status of the site and assessed the impact of the proposed development.

The current ecological constraints identified for the site involve bats and birds. The main building on the site has been assessed to have moderate potential to support roosting bats, and it is possible that

common and widespread bird species may nest in trees and denser shrubs within the site.

The following recommendations have been made for the avoidance and mitigation of potential effects:

- Works to proceed under a Natural England Bat Mitigation Class Licence.
- Incorporate replacement bat roosts for lost habitats.
- Any proposed soft landscaping to use native species of local provenance and/or be wildlife friendly suitable for local bat species.
- Light spill to be minimised to reduce potential impacts on light-sensitive bats.

- Vegetation clearance, should it be required during the nesting bird season, should be checked for active nests by an ecologist before work begins.

The following enhancement measures will be incorporated into the development:

- Green roof which will have several sustainability benefits including reducing surface water run-off, reducing the urban heat island effect, and delivering additional biodiversity.
- Courtyard garden prioritising native and wildlife benefitting species.

Appendix 1: Energy and Carbon Proforma

Energy and Carbon Proforma

Residential

Small minor development (*XL extensions & 1 home*)



Version 1.0

Project

8 and 8a St. John Street

Name:

Date:

June 2025

		Ref. name	New Build Dwelling
		Target values	
Minimise energy demand	Form factor per home or extension	≤ 2	TBC – constraints associated with outside space may mean ≤ 2 is not possible
	Average glazing ratio per façade: North	~10-15%	12%
	South	~20-30%	23%
	East	~10-20%	13%
	West	~10-20%	0% (for privacy)
	Average external walls U-value (W/m ² K)	≤ 0.15	0.11
	Wall thickness (mm)	> 400	TBC based on detailed design
	Average ground floor U-value (W/m ² K)	≤ 0.10	0.12
	Average external roofs U-value (W/m ² K)	≤ 0.10	0.12
	Average external doors U-value (W/m ² K)	≤ 1.0	1.3
	Average windows U-value (W/m ² K) (or double/ triple glazed)	≤ 1 (triple)	1.3
	Air permeability rate (m ³ /h/m ² @ 50 Pa)	≤ 3	3
	Ventilation strategy (background only)	-	MVHR

Use renewable energy	PV footprint area (% of ground floor space)	≥ 40	42%
Use low carbon energy	Fossil fuel free (yes/no)	Yes	Yes
	Heat source - <i>Where the system for generating space heating and hot water is a heat pump and it achieves a SCOP of 3.5 or higher (then a Low Carbon Heat Appraisal not required)</i>	Electric	Electric (Heat Pump)
Reduce overheating risk	Has the Good Homes Alliance overheating risk assessment tool been completed?	Yes	No - Part O dynamic modelling will be undertaken instead
	Resulting score from the GHA tool?	<12	N/A – Part O proposed
Minimise embodied carbon	Confirmation that a summary of the efforts made to design a lean, low carbon structure and building design has been submitted?	Yes	Yes

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Sustainability