ELEMENT SUSTAINABILITY

St Margaret's Chambers, Manchester

Environmental Standards Statement

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1. INTRODUCTION

Element Sustainability has been commissioned by Charlotte Street Estates Limited to review the sustainability performance of the proposed Grade two listed, St Margaret's Chambers residential conversion scheme in Manchester city centre.

The purpose of this statement is to summarise the relevant policy background and requirements of Manchester City Council (hereafter referred to as the council) and demonstrate the ways in which the developer, Charlotte Street Estates Limited, has addressed these aims through their proposals, ensuring all practicable measures have been taken in order 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 support the planning application for this development, and therefore establishes an approach to the delivery of this scheme which meets the criteria outlined by the council that the developer commits to implement at the site.

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2. DEVELOPMENT PROPOSALS

2.1 Development Site Description

The St Margaret's Chambers building is located in the heart of Manchester city centre and consists of an Elizabethan style, brick and stone property, adjoined to a slightly taller property to the west. The building may be accessed via Newton Street and is bound by Back Piccadilly Street to the north and Piccadilly Street to the south.

This brownfield site is considered to be within the Stephenson Square Conservation Area and due to its highly urbanised location has no vegetation or existing watercourses on site.

The location plan and a pre-development image of the site are presented in figures 2.1 and 2.2 below.

Figure 2.1 - Site Location Plan

Figure 2.2 – Pre-Developed Site

2.2 Development Proposals

The proposed scheme comprises the conversion of a Manchester city centre Grade two listed, nineteenth century property into twelve residential apartments.

The accommodation schedule for the St Margaret's Chamber development is presented in Table 2.1.

Table 2.1 – Residential Accommodation Schedule

	1 Bed Apartment	2 Bed Apartment	3 Bed Apartment
St Margaret's Chamber	4	5	3
Total	**12**		

Figures 2.3 to 2.8 present a selection of plans and elevations for the St Margaret's Chambers scheme.

Figure 2.3 – Proposed Newton Street Elevation

Figure 2.4 – Proposed First Floor Plan

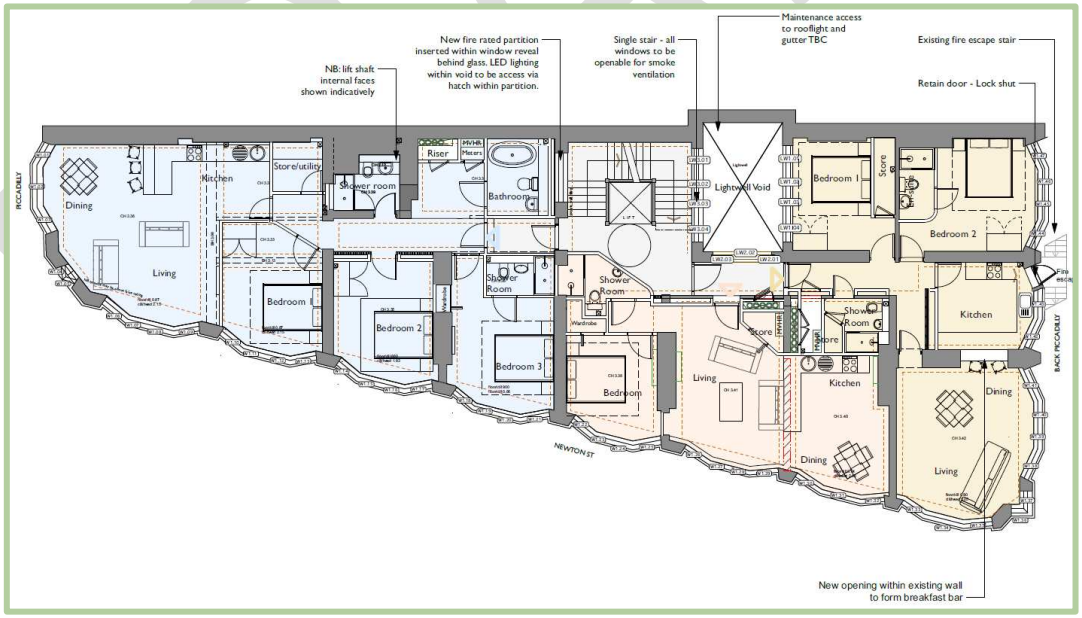
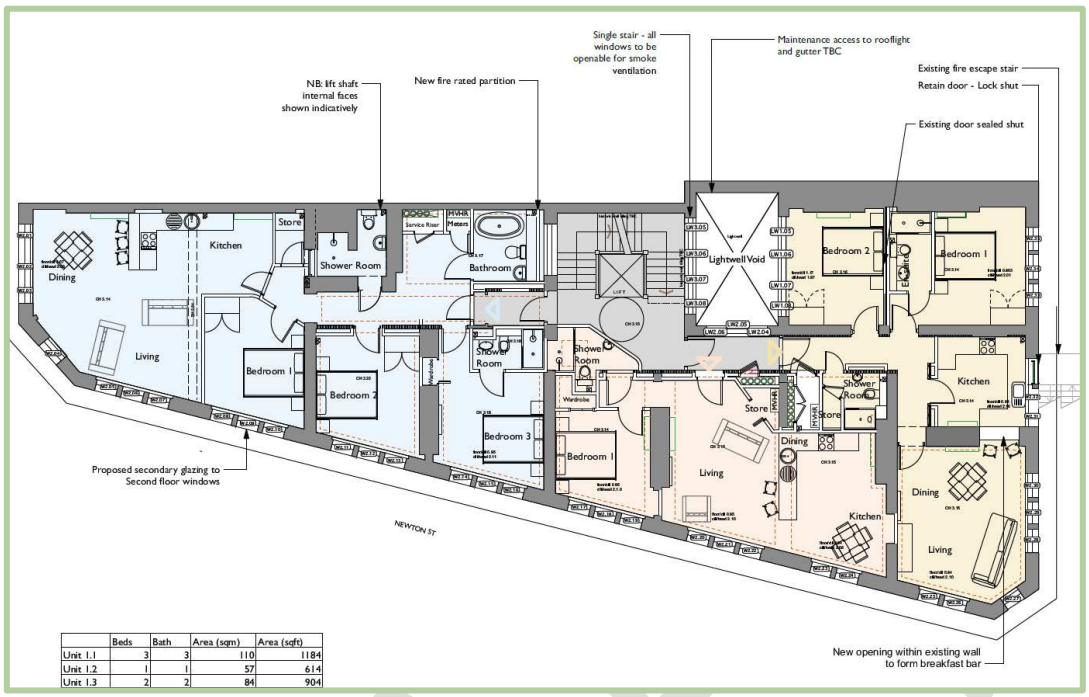


Figure 2.5 – Proposed Second Floor Plan



	Beds	Bath	Area (sqm)	Area (sqft)
Unit 1.1	3	3	110	1184
Unit 1.2	1	1	57	614
Unit 1.3	2	2	84	904

Figure 2.6 – Proposed Third Floor Plan

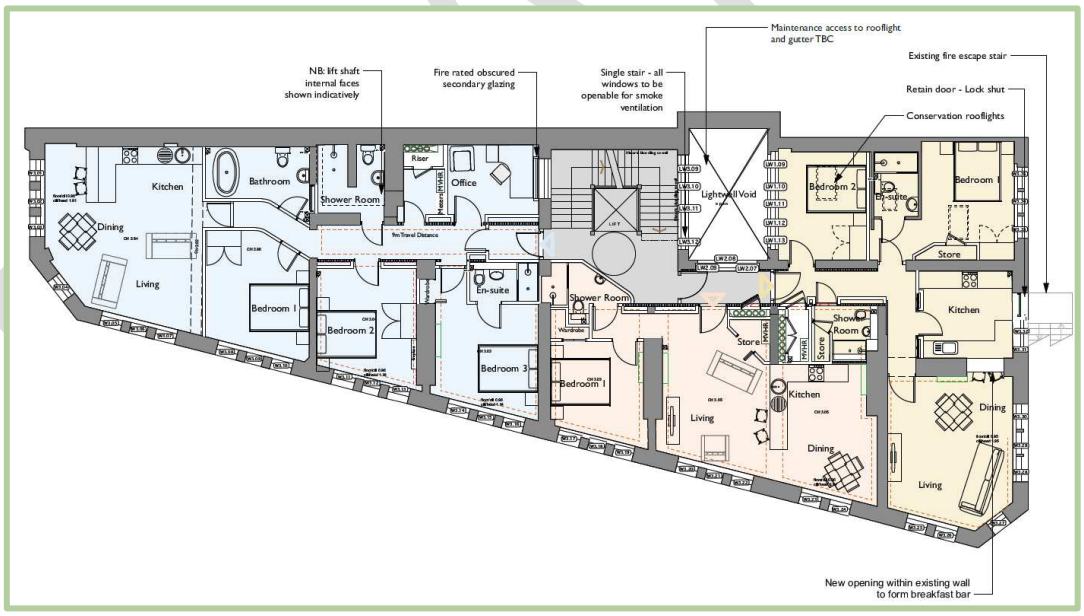
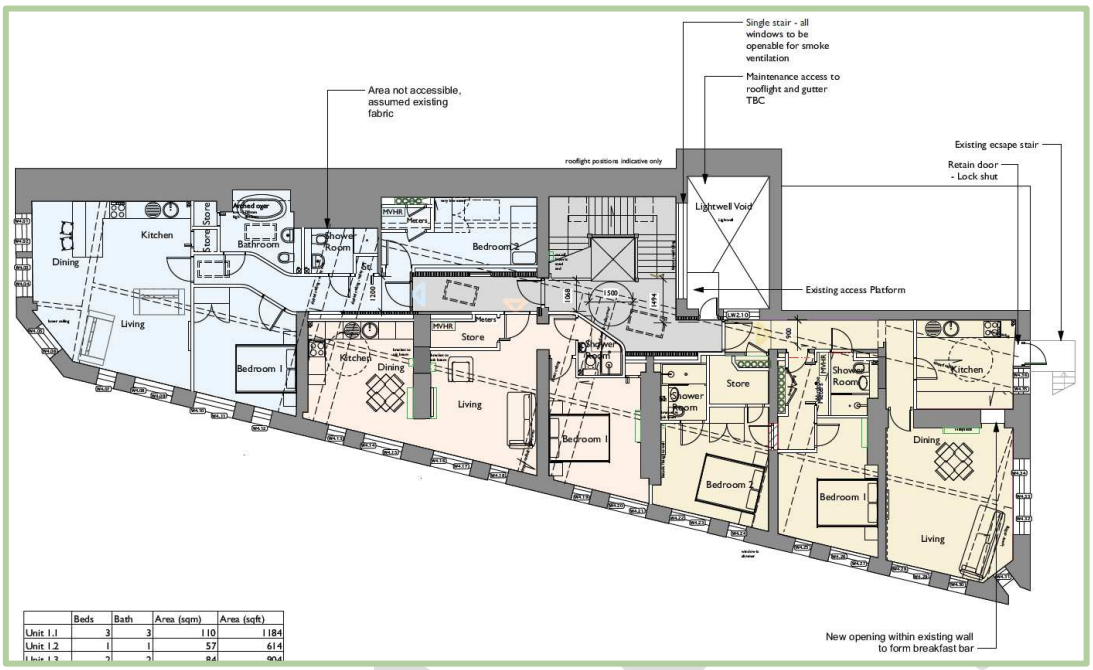
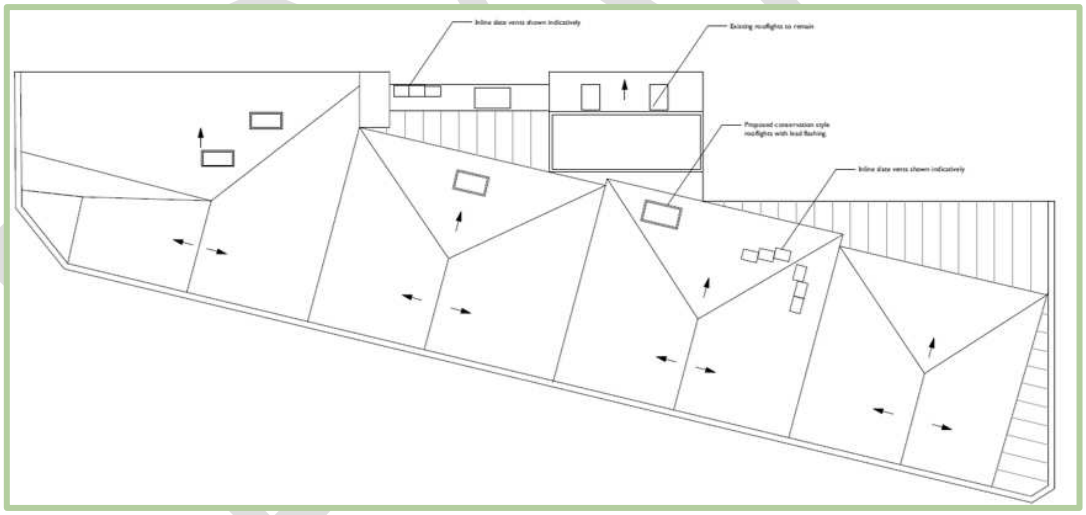


Figure 2.7 – Proposed Fourth Floor Plan



	Beds	Bath	Area (sqm)	Area (sqft)
Unit 1.1	3	3	110	1184
Unit 1.2	1	1	57	614
Unit 1.3	2	2	84	904

Figure 2.8 – Proposed Roof Plan



3. POLICY REVIEW

3.1 National Planning Policy

The National Planning Policy Framework (NPPF) 2021 states that the planning system should play an active role in guiding development to sustainable solutions. At the heart of the 2021 updated NPPF lies the 'presumption' in favour of sustainable development. There are three dimensions to sustainable development, as stated within the NPPF: economic, social, and environmental. These dimensions give rise to the need for the planning system to perform a number of roles:

An economic role – contributing to building a strong, responsive, and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;

A social role – supporting strong, vibrant, and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating beautiful and safe places, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

An environmental role – contributing to protecting and enhancing our natural, built, and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

These dimensions are considered to be mutually dependent with the NPPF, in its entirety, defining sustainable development. The NPPF states that 'the purpose of the planning system is to contribute to the achievement of sustainable development'. It summarises the objective of sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their needs. It goes on to state that at a similarly high level, members of the United Nations – including the United Kingdom – have agreed to pursue the seventeen Global Goals for Sustainable Development in the period to 2030. These address social progress, economic well-being, and environmental protection.

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 the out the long-term strategic policies for Manchester's future development and will form the framework that planning applications will be assessed against.

CS Policy EN 4 - Reducing CO_2 Emissions by Enabling Low and Zero Carbon Development: The Council will seek to reduce fuel poverty and decouple growth in the economy, growth in carbon dioxide (CO_2) 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.

CS 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.

CS Policy EN 6 - Target Framework for CO_2 Reductions from Low or Zero Carbon Energy Supplies: The proposed target framework in EN6 is expressed in terms of CO_2 reduction rather than a requirement for renewable energy. The targets relate to new build projects but the policy intent to improve energy efficiency is still applicable to change of use projects.

CS Policy EN 8 – Adaptation to Climate Change: All new development to be adaptable to climate change in terms of the design, layout, siting and function of the 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.

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Developers will be permitted to use green infrastructure elements such as green roofs, green walls, street trees and waterways to contribute to compliance with CO_2 mitigation under Policy EN6, subject to sufficient evidence to quantify their contribution to compliance.

CS 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.

CS Policy EN14 – 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; this should take account of all sources of flooding identified in the Manchester-Salford-Trafford Strategic Flood Risk Assessment (SFRA).

All new development should minimise surface water run-off, including through the provision of sustainable urban drainage systems (SUDS) and the appropriate use of green infrastructure. Developers should have regard to the surface water run-off rates in the Strategic Flood Risk Assessment (SFRA) User Guide. In critical drainage areas, evidence to justify the surface water run-off approach / rates will be required.

CS Policy EN15 – Biodiversity and Geological Conservation: 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.

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.

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CS 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.

CS 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 as follows (In terms of energy targets this policy should be read alongside policy EN6 and the higher target will apply):

    - For new residential developments, the following Code for Sustainable Homes standards are required to be met as a minimum. This will apply until a higher national standard is required:

        - Year 2010 – Code Level 3;
        - Year 2013 - Code Level 4; and,
        - Year 2016 - Code Level 6;

    - For new commercial developments to demonstrate best practice which will include the application of the BREEAM (Building Research Establishment Environmental Assessment Method) standards.

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3.2.2 Guide to Development in Manchester, Supplementary Planning Document

Manchester's Core Strategy requires that all new residential 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 several environmental standards, and includes the following categories which are identified in the SPD:

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

3.2.3 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, and 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;
- Encourage involvement in all wards by April 2020 through meetings as part of the Our Manchester strategy;
- Review all policies, processes and procedures to ensure the council can become carbon neutral. Present an action plan by March 2020 detailing how the city can stay within its carbon budget;
- 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 measures to ensure future procurement is carbon neutral. Increase the percentage of social value with an additional environmental element;
- Work with suppliers to green their supply chains and support local production;
- 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 Manchester City Council will take in order to reduce carbon emissions from its buildings, energy use and transport. Measures include retrofitting buildings to improve energy efficiency,

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increasing the use of electric vehicles, and seeking one hundred percent renewable energy. Whilst this has also not been formally adopted into planning policy, it is a key consideration for future development proposals.

3.3 Emerging Policies

3.3.1 Places for Everyone

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.

On 1st March 2022, the Secretary of State appointed three planning inspectors to conduct an independent examination of the Places for Everyone Joint Development Plan document. It is therefore considered that the plan is in an advanced stage of preparation.

3.4 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 1: Dwellings (2021 Edition) - Dwellings addresses the conservation of fuel and power in existing and change of use dwellings and extensions, providing guidance in relation to:

a) Limiting heat gains and losses
b) Building services
c) New elements in existing dwellings, including replacing a fabric element and constructing an extension
d) Existing elements in existing dwellings, including renovating or retaining a thermal element, material change of use and change to energy status

However, listed buildings do not need to comply fully with the energy efficiency requirements, where to do so would unacceptably alter their character or appearance.

3.5 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 the St Margaret's Chambers Scheme:

- **Manchester Core Strategy**
  - **CS Policy EN 4 –** Reducing CO_2 Emissions;
  - **CS Policy EN 5 -** Strategic Areas for low and zero carbon decentralised energy infrastructure;
  - **CS Policy EN 6 –** Target Framework for CO_2 Reductions From Low or Zero Carbon Energy Supplies;

- CS Policy EN 8 – Adaptation to Climate Change;
- CS Policy EN9 – Green Infrastructure
- CS Policy EN14 – Flood Risk
- CS Policy EN15 – Biodiversity & Geological Conservation
- CS Policy EN19 – Waste
- CS Policy DM1 – Development Management

- The Guide to Development in Manchester SPD;

- Building Regulations:
  - Part L
    - Approved Document Volume 1 (2021 edition)

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4. SUSTAINABILITY PERFORMANCE

This section provides an appraisal of the development proposals and details the specific approach, design features and specifications which will contribute to reducing the environmental impact of the scheme. This section outlines those commitments that have been made to ensure this scheme contributes to sustainable development and meets the council's policy aims.

4.1 Energy Improvements

In order to limit energy demand and carbon dioxide (CO_2) emissions from the operation of the St Margaret's Chambers building, a number of design features will be integrated that work within the listed status constraints of the site, which will collectively contribute towards the emissions reduction aspirations of the scheme.

Detailed measures are presented in Chapter 5 of this report, but in essence, the energy strategy focuses on a holistic approach to improving the performance of the building, primarily through the improvements in the mechanical and electrical systems.

The reduction in energy demand to meet the carbon reduction targets will be achieved through the following design measures:

- Improved thermal insulation
- Air permeability improvement measures
- Efficient mechanical systems

4.2 Water Conservation

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

- At present, appliances are graded on a scale from G (the least efficient) up to A++ (the most efficient). A water efficiency strategy will be determined for the site and will include for the provision of 'A' rated appliances as a minimum;

- Specification of efficient water fixtures throughout the scheme (low flow taps and dual flush WCs);

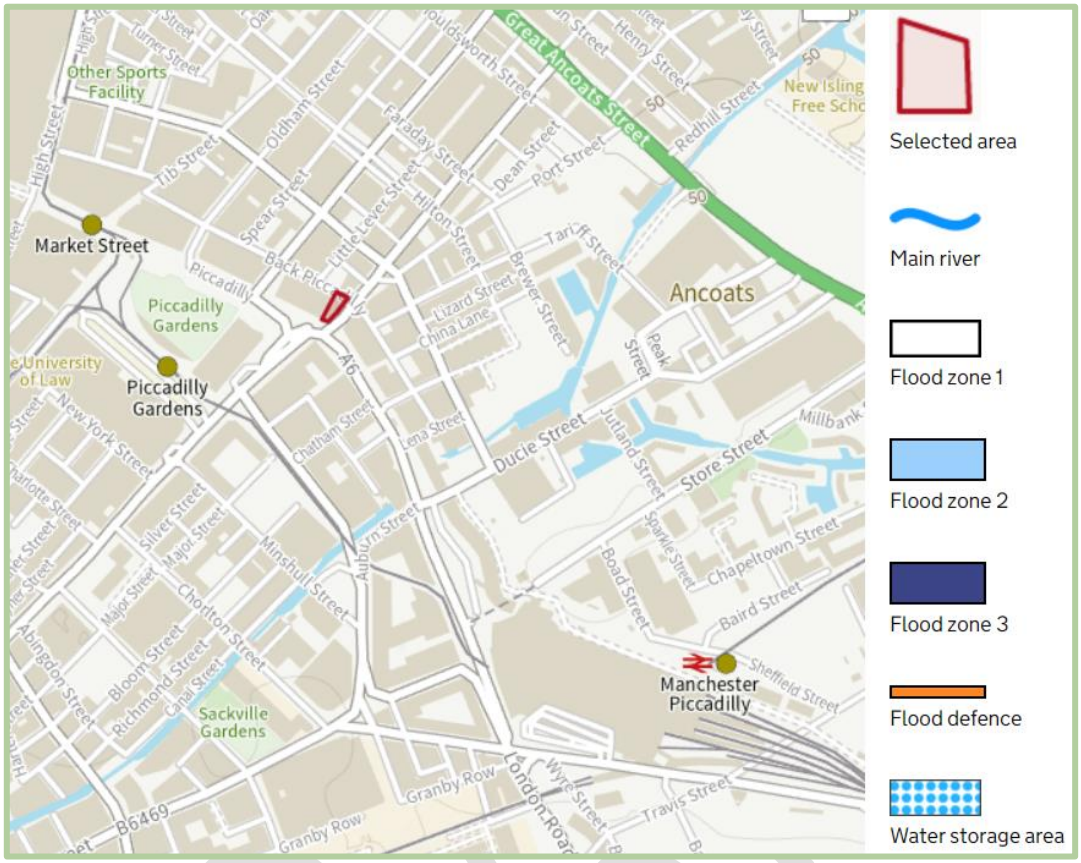
In order to reduce water demand, the sanitary fixtures specified will achieve a calculated daily consumption of <105 litres/person/day.

4.3 Flood Risk Management

Flood Risk -

- The site is located within Flood Risk Zone 1, and the probability of flooding is low (0.1% annual probability of river flooding) as demonstrated in Figure 4.1.

Figure 4.1 – Environment Agency Flood Risk Zone Map



Surface Water -

- The Environment Agency's map of long-term flood risk from surface water, indicates that the site is at 'Low' risk. This area, therefore, has a chance of flooding of less than 0.1% each year as demonstrated in figure 4.2;

The proposed development is therefore considered to be in a low risk area and the proposed development will not increase the risk of flooding on site.

Figure 4.2 – Extent of Flooding from Surface Water

4.4 Waste Management

4.4.1 Operational Waste

The operational waste strategy for the scheme focuses on the segregation of waste at source in order to maximise the potential for residents to recycle. All residents will receive guidance on recycling, and health and safety practices related to the management and storage of waste.

The proposed strategy has been developed in compliance with the policies of Manchester City Council:

- Waste will be segregated at source with the help of segregated bins. It is expected that there will be multiple streams of waste – general, recyclables and compost / green waste;
- Residents will be required to take their waste (via lifts) to the refuse store within the basement;
- The number of bins, and subsequently the size of the refuse store, is based on waste generation figures for each apartment;
- The management company will be responsible for transferring the waste from the refuse stores to a hardstanding service area on the day of collection by refuse operators; and
- Following collection, the bins will then be returned to the refuse store.

4.5 Materials

This development will contribute towards making more efficient use of non-renewable material and to reducing the lifecycle impact of the scheme through the selection of:

- Low carbon construction methods and materials with low embodied carbon levels throughout their whole lifecycle will be prioritised where possible;
- Responsibly sourced timber verified by either the Forest Stewardship Council (FSC) or Programme for the Endorsement of Forest Certification standard (PEFC);
- Local sourcing of materials where feasible and viable, which will minimise the impact of carbon dioxide emissions associated with the transportation of materials;
- Material selection within the buildings 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; and,
- Utilising the Sustainable Traditional Buildings Alliance (STBA) Responsible Retrofit Guidance Wheel to review the potential options with regards to the upgrade and modification of fabric to St Margaret's Chambers.

The inherent re-use of the existing building offers significant savings on embodied carbon.

4.6 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:

Good levels of natural day lighting will be achieved throughout. This will improve the occupant's comfort and reduce the need for energy to artificially light the building.

4.7 Ecology and Biodiversity

Tyrer Ecological Consultants Ltd have carried out a daytime preliminary roost assessment in relation to bats, with an inclusive inspection for breeding birds. From this, the following conclusions can be made:

- The immediate habitat is comprised entirely of hardstanding and typical inner-city buildings such as apartments, hotels and industrial complexes within the city centre;
- Given the lack of proximity to statutory designated sites in the wider area and the small scale of the proposed works, there are unlikely to be any direct impact upon any sites or their associated interest features;
- St Margaret's Chambers is duly categorised as offering 'Negligible' bat roost suitability; and
- There was no evidence of breeding birds during the site inspection.

Due to the sites highly urbanised location and listed status, no mitigation measures are suitable for the proposed development, due to these unacceptably negatively impacting the heritage significance of the property and there is no new external construction proposed. Therefore, it is not possible to implement external habitat improvement features onsite.

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4.8 Transport

The proposed site has a high level of connectivity and benefits from access to a number of sustainable transport options within close proximity to the site, as follows:

- The closest bus stop is located at Piccadilly Gardens, approximately a four-minute walk from the site. This provides services to areas such as West Didsbury, Bolton, Trafford Centre and other city centre locations.

- The closest tram stop is also located at Piccadilly Gardens, approximately a four-minute walk from the site, providing an alternative transport mode to move around the city, but also to destinations further afield such as Altrincham, Bury, Rochdale, Ashton Under Lyme and Manchester Airport.

- Manchester Piccadilly Train Station is approximately a seven-minute walk from the site, offering excellent links to both regional and national rail network.

- There is a good level of pedestrian and cycle infrastructure within the vicinity of the site, linking the surrounding area and public transport stops, ensuring the site is well served by sustainable modes of transport, both to and from the site.

- The scheme will provide a total of twelve cycle spaces (one per apartment).

Overall, the surrounding area benefits from excellent levels of pedestrian and cycling infrastructure and there are plenty of public transport options and amenities within appropriate walking distance of the site.

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5. ENERGY STRATEGY

5.1 Energy Strategy

The energy strategy focuses on a holistic approach to improving the buildings' operational efficiency and carbon dioxide emissions performance, through improvements to the efficiency of the mechanical and electrical systems and building fabric, in accordance with the listed constraints of the building.

The design measures outlined in the Energy Strategy comply with the policy requirements stipulated in Manchester City Council's Core Strategy.

5.1.1 Fabric Specification

The standard measurement of heat transfer through a given building material or construction type is the U-value (W/m^{2}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 areas and elements of the construction:

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

Table 5.1 presents the fabric parameters proposed for limiting heat loss and improving the building performance of the St Margaret's Chamber building.

Table 5.1 – Fabric Parameters

Construction Element	Proposed Fabric Specification
Main Wall Type	U=1.50 W/m^{2}K
Basement Floor (existing)	U=1.30 W/m^{2}K (Assumed existing)
Roof	U=0.14 W/m^{2}K
Windows	U=1.30 W/m^{2}K

These specifications and design attributes will provide the following benefits:

- **Upgraded thermal insulation** to the roof will help to minimise heat loss through this building element;
- **Thermally efficient, double-glazed windows** will be specified with argon gas fill and low emissivity coatings to limit heat loss through the panes;
- **Efficient Form**: Residential apartments, as proposed for this scheme, are an inherently efficient form of construction, both in terms of the materials required to build the dwellings and the ongoing heat energy demand. This is a result of relatively low areas of external heat loss elements associated with such layouts which enhance the energy efficiency of the dwellings and guarantees low energy demand throughout their occupation.

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5.1.2 Building Services Specification

In addition to the improvements in the building fabric and thermal performance, a number of measures to improve the energy efficiency of the building systems have also been considered. The proposed mechanical and electrical specification that will be incorporated to ensure efficient servicing of the buildings is presented in Table 5.3.

Table 5.3 - Mechanical and Electrical Specification

Building Elements	Proposed Fabric Specification
Space Heating	Electric panel heaters
Water Heating	Immersion cylinder
Potable Water Efficiency	High efficiency fixtures – 105 litres / person / day
Lighting	LED
Controls	Compliant time clock and thermostats

The mechanical and electrical specification associated with each aspect of the scheme will provide the following benefits:

- **Electrical panel heating** generates a reduced overheating potential – electric space heating delivers virtually instantaneous heating at the location it is required, unlike a 'wet system' associated with communal gas boilers which inherently have a long lag time for the heat to be generated and then dissipated when no longer needed. This lag time can lead to the units overheating as the hot water remains in the radiators for a considerable time after the heat demand is required;

- **LED lighting** will be specified throughout the scheme 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.

- **Sophisticated heating controls** including time and temperature controls will ensure the efficient delivery of heat from electric panel heaters to further reduce the apartments' energy demand.

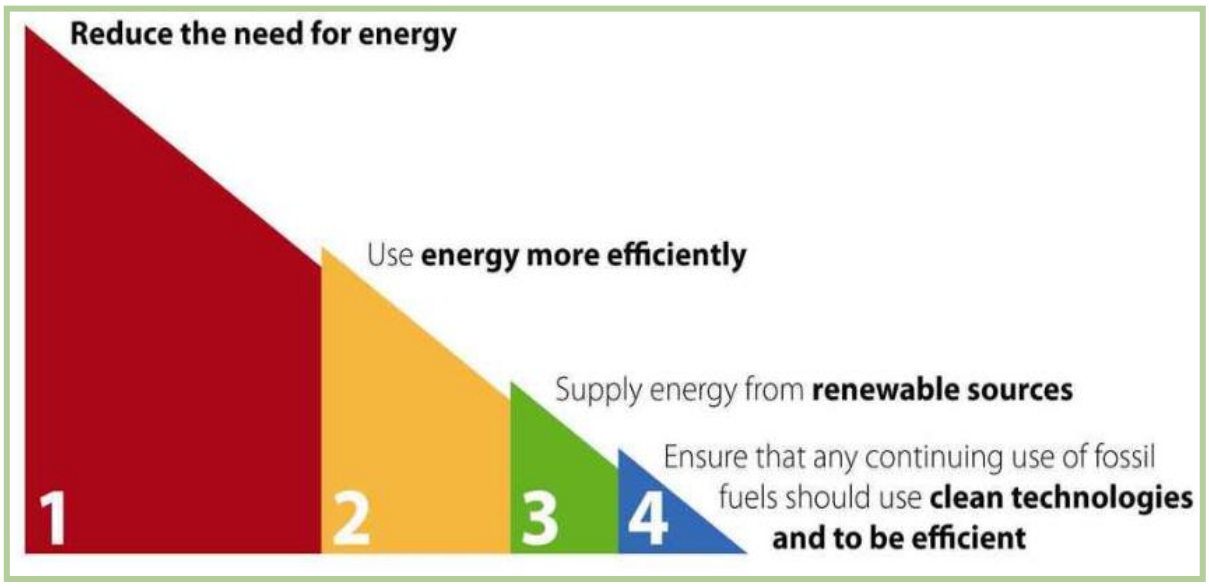
The proposed design specification will improve the operational efficiency and carbon dioxide emissions performance of the scheme.

6. ENERGY HIERARCHY

The proposed St Margaret's Chamber scheme will be refurbished to a high quality and will incorporate an improved material specification, in order to improve the energy efficiency of the whole building.

The energy hierarchy provides a framework to guide energy policy and decision making to achieve practical and cost-effective carbon emission reductions. The hierarchy prioritises demand-side activities to reduce wastage and improve efficiency (see Figure 6.1).

Figure 6.1 – The Energy Hierarchy



First Principle:

The following efficiency measures are designed to reduce heat losses and minimise energy demand:

- The building will be refurbished to a high standard with materials and design criteria which align with the current Building Regulation standards, incorporating efficiency measures designed to reduce heat losses and minimise energy demand;

- Heating systems will be provided with zonal, programmable thermostatic controls which will allow occupants to control zones within their units independently for maximum flexibility. This is intended to reduce the demand for additional energy usage.

Second Principle:

The approach taken for this scheme will help to minimise energy demand and associated carbon dioxide emissions. This is aligned with the second principle of the energy hierarchy, which states that reduction in energy demand should be achieved initially by energy efficiency.

To this effect, the following measures have been proposed:

- Air permeability improvement measures will assist in limiting the heat loss through the structure of the buildings;

- 100% LED provision and sophisticated control systems for the space within the buildings will also ensure the energy consumed is used efficiently.

Third Principle:

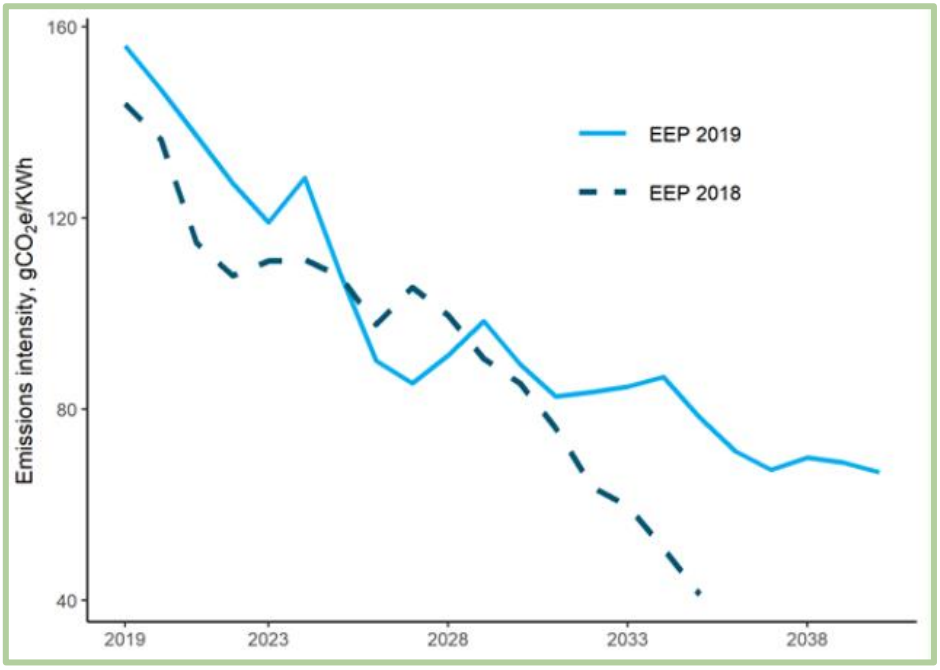
Due to the listed building and heritage constraints, coupled with the limited roof area available, no PV will be installed as part of the development.

Fourth Principle:

The use of electric panel heaters will ensure that fossil fuels converted and distributed through the National Grid as electrical energy for heating purposes will be consumed cleanly and efficiently.

Furthermore, as the UK's electricity grid CO_2 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.

Figure 6.2 - Energy and Emissions Projections 2020 (BEIS)



7. CLIMATE EMERGENCY

A Climate Emergency was declared by Manchester City Council in July 2019, with a target to make Manchester zero-carbon by 2038. In support of this, the developer wishes to highlight the following measures that will form part of the specification of this development:

- Through the inherent nature of this scheme, refurbishment of the existing building materials will ultimately limit the levels of embodied carbon, compared to a new build alternative.

- During occupation, the building will benefit from recycling facilities to enable residents to recycle, in line with the local authority waste reduction targets. Thereby diverting more materials away from landfill and reducing the building's carbon footprint further.

The proposed development will demonstrate resilience to potential climate change effects through cycle storage facilities and access to local sustainable modes of transport:

- This is facilitated by:

    - Secure cycle storage provision;
    - Local access to transport nodes for bus and rail; and,
    - Local amenities that are within easy walking distance of the site, enabling residents to support local businesses with a reduced need to travel.

The building is designed to incorporate features that will serve to reduce energy demand, and in turn, carbon emissions arising from access to the building:

    - Sophisticated time and temperature controls.

These commitments will assist Manchester City Council in meeting their Climate Change Emergency objectives.

8. CONCLUSION

This statement has reviewed the sustainability performance of the proposed development against national and local planning policies. Demonstrating the ways in which the developer has addressed these aims through their proposals, ensuring all practicable measures have been taken in order to deliver a sustainable scheme. In addition to this, the material specification and servicing strategy has also been assessed. Therefore, the conclusion that may be drawn from the process is as per the following:

Sustainability Performance –

- The inherent re-use of the existing St Margaret's Chambers building offers significant savings on embodied carbon.
- Water consumption of the development will be limited to 105 litres/person/day through **the specification of efficient water fixtures.**
- The proposed scheme location promotes access **to sustainable transport options** and the design has prioritised pedestrians and cyclists over the private car. Provision of cycle storage and access to public transport will contribute towards creating a highly connected and sustainable development.
- The development site is **located within Flood Risk Zone 1** and the **risk from surface water flooding is low in accordance with CS Policy EN14 and EN8.**
- **A refuse management strategy** has been developed to manage waste and recyclables from the operational phase of the development in accordance with **CS Policy EN19 and DM1**. Source segregation and the provision of refuse areas will encourage individuals to recycle and **divert waste away from landfills.**
- Materials are proposed to be **responsibly and locally sourced where practically feasible**. Material selection will be carefully considered to avoid the use of toxic materials and materials with VOCs.
- Building **materials with low embodied carbon** levels will be prioritised in accordance with **CS Policy EN4**.

Energy Strategy –

The development will be designed and specified in accordance with **the principles of the energy hierarchy**:

- A combination of **improvements to the building fabric, efficient mechanical and electrical systems**, and sophisticated controls will be introduced to help improve the energy efficiency of the scheme in accordance with **CS Policy EN6**.
- The UK's electricity grid CO_2 footprint continues to improve, therefore the carbon dioxide emissions associated with the operational phase of the proposed scheme will too.

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

- The re-use of the existing building in a highly accessible, urban location will provide a development that inherently supports sustainable living, with access to local amenities and sustainable modes of transport;

- The fabric improvements will assist with improving the energy efficiency of the proposed scheme.

The proposals reviewed within this statement for the St Margaret's Chamber scheme in Manchester, will provide a high quality development that accords with the guidance provided within the Manchester City Council' adopted planning policies.