



ELEMENT
SUSTAINABILITY

LAND AT SCOBELL STREET, BURY

ENERGY STATEMENT

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1. INTRODUCTION

Element Sustainability has been commissioned by Wain Estates Limited to review the energy performance of the proposed residential development for up to 280 dwellings to be constructed in Bury.

The purpose of this statement is to summarise the relevant policy background and requirements of Bury 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 an energy efficient development in Bury and seek to minimise the carbon emissions associated with the regulated energy performance of the scheme.

This report is intended to support the outline planning application for this development and therefore, establish an approach to the delivery of this scheme which meets the criteria required by the council and which the developer commits to implement at the site once further design details are more fully resolved within the reserved matters application.



2. DEVELOPMENT PROPOSALS

2.1 Development Site Description

The application site is situated in between Tottington and Bury, just off the B6213 along Scobell Street. The site comprises a large parcel of unoccupied greenfield land which is surrounded by other residential properties to the north and west. Beyond the eastern and southern perimeters are other proposed development sites as presented in Figure 2.1 below.

The pre-development site and development framework are presented in Figures 2.1 and 2.2 below.

Figure 2.1 – Pre-Developed Site



Figure 2.2 Development Framework



2.2 Development Proposals

The outline proposals include for the erection of up to 280 dwellings with public open space, landscaping and vehicular access from Church Street.



3. POLICY REVIEW

3.1 National Planning Policy

The National Planning Policy Framework was revised in response to the Levelling-up and Regeneration Bill: reforms to national planning policy consultation on 19th December 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 Bury Unitary Development Plan (UDP)

The current Bury UDP was adopted by the Council on 29th August 1997. The Council is now working to replace the adopted UDP with a new document called the Bury Local Plan. Until the new Local Plan is produced, the UDP will continue to be used to make planning decisions.

The following policies are therefore relevant to this development:

EN4 – Energy Conservation: The Council will encourage development which contributes to energy conservation in the Borough. The use of renewable energy resources and the incorporation of energy efficiency measures in built development and the transport system will be encouraged.

EN4/1 - Renewable Energy: The Council will encourage proposals for the provision of renewable energy sources, subject to compliance with other policies and proposals of the Plan. In particular, the Council will seek to ensure that proposals:



- Do not involve an unacceptable loss of amenity, for example through visual intrusion and noise;
- Would not have an unacceptable adverse impact on the setting of scheduled ancient monuments, Conservation Areas, Listed Buildings and archaeological remains;
- Would not have an unacceptable adverse impact on areas of Green Belt, Special Landscape Areas and areas of ecological importance;
- Would not result in a health or safety risk, or nuisance to the public;
- Where necessary, include an environmental assessment as part of the planning application; and,
- Would not have an unacceptable adverse impact on the Borough's natural environment.

EN4/2 - Energy Efficiency: The Council will encourage energy efficiency in development proposals through:

- The promotion of energy efficient modes of transport such as walking, cycling and public transport;
- Seeking the location of new development in areas easily accessible to public transport and local facilities;
- Promoting the efficient use of energy in the design and layout of development.

3.3 Regional Policy

3.3.1 Places for Everyone

Places for Everyone is the joint development plan of nine Greater Manchester local authorities (Bolton, **Bury**, Manchester, Oldham, Rochdale, Salford, Tameside, Trafford, and Wigan) dealing with strategic planning issues including jobs, homes, transport, and the natural environment. Following the examination of the plan all nine Places for Everyone (PfE) Councils considered the Inspectors' recommendations and the adoption of the plan and related documentation at Council meetings held between 28th February and 20th March 2024.

All nine authorities adopted the PfE Plan. Therefore, this will now become part of the statutory development plan for each of the nine PfE authorities, on 21st March 2024.

The following policies have been considered as part of the proposed development:

Policy JP-S1: Sustainable Development: To help tackle climate change, development should aim to maximise its economic, social and environmental benefits simultaneously, minimise its adverse impacts, utilise sustainable construction techniques and actively seek opportunities to secure net gains across each of the different objectives.

In bringing forward previously developed sites for development, particular attention will be paid to tackling land contamination and stability issues, ensuring that appropriate mitigation and remediation is implemented to enable sites to be brought back into use effectively.

Addressing Climate Change

Greater Manchester's Vision is to be at the forefront of action on climate change and to make its fair contribution to international commitments by becoming a carbon neutral city region by 2038.

To meet the carbon commitments, the following will be required:



- Be carbon neutral by 2038;
- Hold cumulative carbon dioxide emissions to within the council's carbon budget; and,
- Initiate a programme of mitigation to reduce emissions including by:
 - Significantly upscaling solar photovoltaic energy;
 - Reducing heat demand in homes;
 - Moving away from carbon intensive gas as the primary source of heat; and,
 - Increasing biofuel use.
- In supporting Greater Manchester's ambitions, climate change is a key theme running throughout the plan, rather than being reduced to a single policy, and it is only through this combination of actions that it can be properly addressed. In particular we set out:
 - Methods to de-carbonise the city region through new and existing development, effective land management and through the provision of infrastructure and new technologies Policy JP-S2 'Carbon and Energy'; and,
 - The delivery of renewable and low carbon energy schemes Policy JP-S3 'Heat and Energy Networks'.

Carbon and Energy

- Meeting the 2038 carbon neutrality target will require a radical transformation across a range of sectors to drive carbon reduction. Within this, new development will have a critical role to play and all new homes and commercial/industrial buildings will need to achieve net zero carbon by 2028.
- It is expected that development in the plan area will apply a net zero carbon approach to operational emissions up until 2028, thereafter emissions in construction should be considered. Minimum carbon reduction targets will be set in line with the Future Homes Standard of 80% or until such a time this is superseded.
- 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.
- Therefore, where planning applications for residential development are accompanied by an energy statement, the following best practice thresholds should be seen as the starting point in relation to reducing energy demand and onsite renewable energy generation. The thresholds set out in Table 3.1, for post 2025, are consistent with the GM Five Year Environment Plan.

Table 3.1 – Thresholds for Reducing Energy Demand and Onsite Renewable Energy

	Space Heat Demand	Hot Water Energy Demand	Renewable Energy Generation Targets
2021 - 2025	Houses (30kWh/m ²) Flats (25kWh/m ²)	20% energy demand reduction in the total heat required for water heating	Photovoltaic installation: 20% ground floorspace



2025 - Onwards	Houses (20kWh/m ²)	20% energy demand reduction in the total heat required for water heating	Photovoltaic installation: 40% ground floorspace
	Flats (15kWh/m ²)		

- In calculating carbon emissions from 2025, 'unregulated' emissions (e.g. those associated with cooking and small appliances) should be assessed, in addition to 'regulated' emissions. The only way that this can be deliverable will be through the use of onsite electricity generation or through carbon offsetting ('allowable solutions') as occupants' lifestyle choices are not pre-determined by energy efficiency measures associated with construction standards.
- By following the energy hierarchy, new development will need to achieve net zero carbon through the maximisation of on-site measures first. However, circumstances where a development has demonstrated that the hierarchy has been followed and there are no reasonable alternatives to meet the minimum carbon reductions, then payment to offset remaining emissions will also be required. Such payments should be expected to fund other carbon saving programmes within Greater Manchester to help meet the 5 Year Environment Plan targets.

Policy JP-S 2 – Carbon and Energy: The aim of delivering a carbon neutral Greater Manchester no later than 2038, with a dramatic reduction in greenhouse gas emissions, will be supported through a range of measures including:

- Promoting the use of life cycle cost and carbon assessment tools to ensure the long-term impacts from development can be captured;
- Taking a positive approach to renewable and low carbon energy schemes, particularly schemes that are led by, or meet the needs of local communities;
- An expectation that new development will, unless it can be demonstrated that it is not practicable or financially viable;
 - Be net zero carbon which applies:
 - From adoption – to regulated operational carbon emissions;
 - From 2028 - to all emissions 'in construction'.
 - From 2025 development should also calculate and minimise carbon emissions from unregulated emissions alongside regulated emissions.
 - Development proposals should set out how this has been achieved in an energy statement in accordance with the energy hierarchy, which in order of importance seeks to:
 - Minimise energy demand;
 - Maximise energy efficiency;
 - Use renewable energy;
 - Use low carbon energy; and
 - Utilise other energy sources.
- From 2025 any residual carbon emissions that cannot be fully mitigated onsite should be offset, in agreement with the relevant local planning authority, through a financial contribution to a carbon offset fund;



- As an interim measure, development should be consistent with the 2022 Part L Building Regulations unless superseded by changes to building regulations and/or national or local planning policies.
 - Where practicable, prioritise connection to a renewable energy/heating/cooling network in the first instance or a low carbon energy/heating/cooling network that is adaptable to non-fossil fuels at a later date; and,
 - In residential developments, achieve energy demand reductions for residential development in terms of space heat demand; hot water energy demand and the delivery of on-site renewable energy generation.
- For renewable energy generation priority should be given to PV installation where technically feasible, alternative technologies will be appropriate where the equivalent generation is evidenced; and,
- Include a detailed energy statement to demonstrate via site relevant evidence how the development has sought to maximize 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.
- Districts Local Plans may set out specific carbon emission reduction and energy demand targets within Local Plans.

3.4 Bury Climate Emergency

In 2019, Bury Council declared a climate emergency and in response to this, the council created a Climate Action Strategy which is updated annually. The Climate Action Strategy identifies nine priority areas for action:

- Energy Supply
- Homes, Workplaces & Public Buildings
- Low Carbon Travel
- Consumption & Waste
- Food
- Natural Environment
- Green Economy
- Environmental Justice
- Climate Resilience & Adaptation

3.5 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: Gives guidance on how to comply with Part L of Schedule 1 to the Building Regulations and the energy efficiency requirements for dwellings.

The minimum energy performance requirements shall be approved and expressed in accordance with the methodology for:



- New buildings, in the form of target CO₂ emission rates;
- New buildings, in the form of target fabric efficiency rates; and,
- New buildings in the form of target primary energy rates.

3.6 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:

Bury UDP

- **EN4** – Energy Conservation
- **EN4/1** - Renewable Energy
- **EN4/2** - Energy Efficiency

Building Regulations, Part L

- Approved Document Volume 1: Dwellings



4. ENERGY STRATEGY

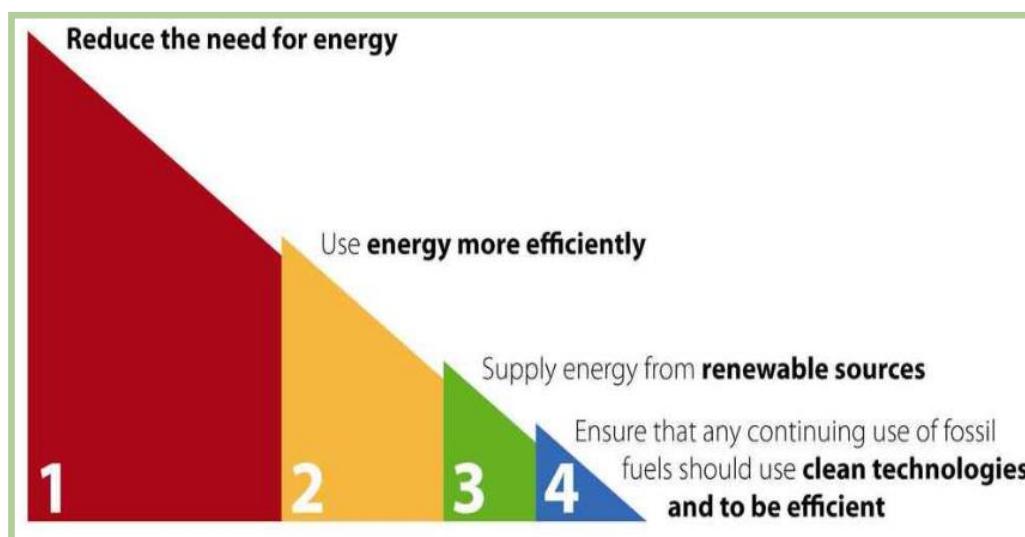
4.1 The Energy Hierarchy

The energy strategy for the outline proposals will prioritise an enhanced 'fabric led' solution coupled with building regulation compliant servicing provision. An enhanced building fabric specification throughout the scheme allied to efficient servicing and controls will achieve compliance with the new build carbon dioxide emission reduction and fabric energy efficiency targets stipulated by Building Regulation, Part L and Bury's Unitary Development Plan.

The Energy Hierarchy (see Figure 4.1) provides a framework to guide energy policy and decision making to achieve practical and cost-effective carbon emission reductions. The energy hierarchy is built upon four principles:

- i. **First Principle**
 - o Reduce the need for energy.
- ii. **Second Principle**
 - o Use energy more efficiently.
- iii. **Third Principle**
 - o Supply energy from renewable sources.
- iv. **Fourth Principle**
 - o Ensure that any continuing use of fossil fuels should use clean technologies and be efficient.

Figure 4.1 – The Energy Hierarchy



In accordance with Bury's Unitary Development Plan, 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 dwellings that are inherently efficient and cost-effective during occupation. The proposed outline energy strategy is presented below.



4.2 First Principle - 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.

In accordance with Bury's Unitary Development Plan Policy EN4 – Energy Conservation, this development will benefit from a material and design specification that is aligned with Building Regulation standards and will include numerous efficiency measures designed to reduce heat losses and minimise energy demand in accordance with the first principle of the energy hierarchy, including:

- ✓ High performance U - values;
- ✓ Reduced thermal bridge heat losses;
- ✓ Efficient form of construction; and,
- ✓ 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.

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

4.3 Second Principle - Building Services

As per the second principle of the energy hierarchy, the operational efficiency of the dwellings will be optimised via the use efficient mechanical and electrical systems including the use of 100% low energy and LED lighting provision and the incorporation of sophisticated control systems for the space and water heating.



5. PROPOSED RENEWABLE ENERGY AND LOW CARBON SOLUTIONS

In accordance with Bury's Unitary Development Plan Policy EN4/1 – Renewable Energy and Places for Everyone criteria, the enhanced fabric specification will be supplemented by renewable energy technology as part of the site wide energy strategy to optimise the on-site dwelling emission rate reductions.

5.1 Third Principle - Renewable Technology Feasibility

An analysis of the most appropriate renewable energy options will be undertaken, and a number of renewable energy technologies will be considered for this site, including:

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

5.2 Fourth Principle – Grid Mix Electricity

The proposed building services that will consume grid mix electricity which is, in part (albeit diminishing) sourced from a mix of fossil fuels / LZC and nuclear, will be efficient systems and will ensure that fossil fuels are consumed efficiently, as per the 4th principle of energy hierarchy.

5.3 Heat Network

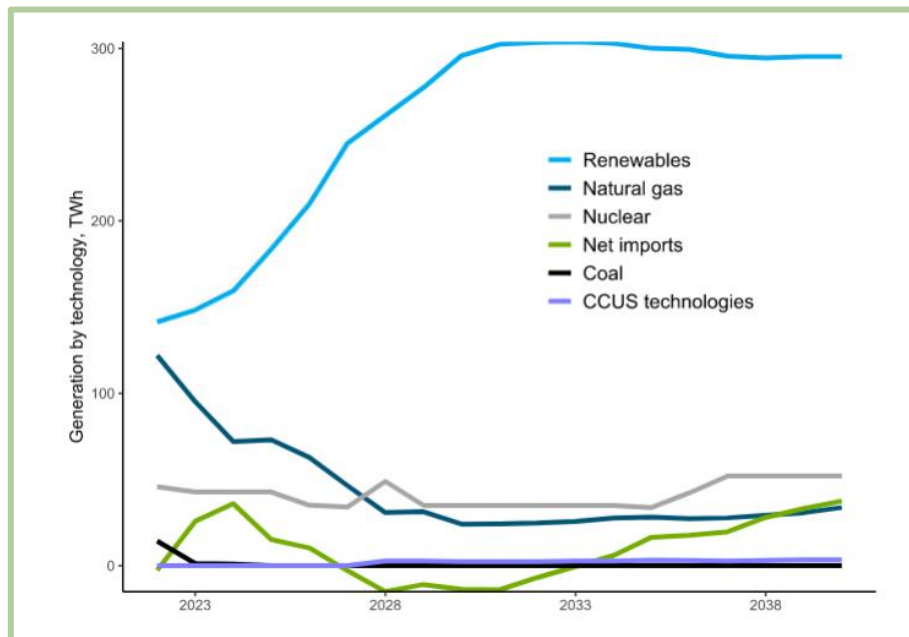
It has been determined that the site is not located within a Heat and Energy Network Opportunity Area. However, the proposed scheme is expected to incorporate on-site renewable technology, aligning with Places for Everyone Policy JP-S1: Sustainable Development.

5.4 Decarbonisation

As the UK electricity grid's carbon dioxide emissions (CO₂) footprint continues to improve, so too would the CO₂ associated with the operational phase of the proposed scheme.

The UK grid mix electricity carbon emissions will decrease significantly by 2035, with the carbon intensity of electricity generation falling by 93% between 2020 and 2035. This is due to the progressive shift away from fossil fuels as demonstrated in Figure 5.1 below.



Figure 5.1 - Electricity generation by Fuel Source, TWh

Source – BEIS, Energy and Emissions Projections (2022)

Electricity is recognised as a less carbon-intensive fuel source than mains gas and other fossil fuels, which is only likely to improve as the percentage of electricity generation from renewable technologies increases.



6. PLACES FOR EVERYONE

Bury Council has now adopted the Places for Everyone Policies, which includes **Policy JP-S1- Sustainable Development and Policy JP-S 2 – Carbon and Energy**.

In support of this, the developer wishes to highlight the following measures that will form part of the energy strategy for this development:

- Materials with a low life cycle cost and embodied carbon will be prioritised where feasible to ensure the long-term impacts from the development can be minimised. In order to measure the environmental impacts of the scheme;
- The proposed scheme will achieve the necessary carbon emissions reductions required by Building Regulations, Part L (2021 edition);
- As stated in Sections 4 and 5, the proposed scheme will be designed in accordance with the principles of the energy hierarchy, which in order of importance seeks to:
 - i. Minimise energy demand;
 - ii. Maximise energy efficiency;
 - iii. Use renewable energy;
 - iv. Use low carbon energy;
- The proposed development will be assessed against the latest version of Part L Building Regulations (2021) – Approved Document Volume 1;
- It has been determined that the site is not located within a Heat and Energy Network Opportunity Area. However, the proposed energy strategy will be a more effective alternative for minimising carbon emissions, which is also in line with the requirements of PfE Policy JP-S3 – Heat and Energy Networks.
- Table 6.1 and 6.2 below present the energy demand reduction targets as stipulated within the Places for Everyone policy JP-S2 and the results expected to be achieved by the proposed dwellings, in terms of:
 - Space heat demand;
 - Hot water energy demand; and,
 - Delivery of on-site renewable energy generation:

Table 6.1 – PfE Targets for Reducing Energy Demand and Onsite Renewable Energy

	Space Heat Demand	Hot Water Energy Demand	Renewable Energy Generation Targets
Year 2021 - 2025	Houses (30kWh/m ²) Flats (25kWh/m ²)	20% energy demand reduction in the total heat required for water heating	Photovoltaic installation: 20% ground floorspace



Table 6.2 presents the expected results of the proposed dwellings in terms of space heat and hot water energy demand based upon SAP10 energy calculation data.

Table 6.2 – Assessment Results for Energy Demand and Onsite Renewable Energy

	Space Heat Demand	Hot Water Energy Demand	Renewable Energy Generation Targets
Proposed Residential Dwellings	Targeted space heat demand of at least 30kWh/m ² reduction.	Targeted hot water energy demand of at least a 20% energy demand reduction.	The most appropriate renewable energy options will be installed to meet the renewable energy generation targets.

- Policy JP S2 expects new developments to be net zero carbon by:
 - from adoption – to regulated operational carbon emissions; and
 - from 2028 - to all emissions 'in construction'.

The proposed scheme will support a shift towards net zero carbon during operation. This will be achieved through:

1. The specification of highly efficient renewable technologies will reduce the energy intensity of the development in line with Part L (2021) of Building Regulations;
2. The energy strategy will benefit from the decarbonisation of the grid, which is expected to improve as the percentage of electricity generation from renewable technologies increases (see Figure 5.1); and,
3. Therefore, the operational CO₂ emissions associated with the proposed scheme are anticipated to decrease in line with these improvements.



7. CLIMATE CHANGE EMERGENCY

In 2019, Bury Council declared a climate emergency and 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 aligns with the Council's local planning policies, as well as Part L of the Building Regulations, in relation to carbon emissions and minimising energy consumption:
 - In securing compliance with the current, Building Regulation Part L targets, a commitment is made to minimise demand side energy loads – in accordance with the principles of the Energy Hierarchy.
 - An analysis of the most appropriate renewable energy options will be undertaken, and a number of renewable energy technologies will be considered for this site, including:
 - Solar hot water;
 - Photovoltaics (PV);
 - Wind;
 - Air source heat pumps;
 - Ground source heat pumps; and,
 - Biomass heating.
 - The proposed building services that will consume grid mix electricity which will be efficient systems and will ensure that fossil fuels are consumed efficiently.
 - A commitment is made to achieving:
 - An improvement in the emission rate reduction relative to the onerous Part L Approved Document Volume 1 compliance standards.



8. CONCLUSION

This statement has reviewed the energy performance of the outline residential development proposals against national and local planning policies. The conclusions that may be drawn from the review are as per the following:

The scheme will be designed and specified in accordance with the principles of the energy hierarchy and improves upon the carbon dioxide (CO₂) reduction targets and guidance set by Bury's Unitary Development Plan, Places for Everyone and Part L Approved Document Volume 1 compliance standards:

- Several measures will be implemented to ensure that the proposed specification aligns with the latest Part L Approved Document Volume 1 criteria and Places for Everyone criteria.
- The proposed material and mechanical specification will provide various benefits including; upgraded thermal insulation, efficient mechanical servicing, and low energy lighting.
- An analysis of the most appropriate renewable energy options will be undertaken, and a number of renewable energy technologies will be considered for this site, including:
 - Solar hot water;
 - Photovoltaics (PV);
 - Wind;
 - Air source heat pumps;
 - Ground source heat pumps; and,
 - Biomass heating.
- The proposed building services that will consume grid mix electricity which will be efficient systems and will ensure that fossil fuels are consumed efficiently.

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

- Improving upon the regulatory Part L compliance criteria will assist in lessening the impact of this development on the environment by way of reducing carbon emissions.

In conclusion, the proposed development will deliver a high quality development that accords with the guidance provided within local, regional and national planning policy guidance and regulatory standards.

