

ENERGY AND CARBON STATEMENT

Proposed Replacement Dwelling
6 Wentworth Avenue, Whitefield, M45 7QG

1. Introduction

This Energy and Carbon Statement has been prepared in support of the planning application for the demolition of the existing dwelling and construction of a replacement dwelling at 6 Wentworth Avenue, Whitefield.

The statement has been prepared to demonstrate how the proposed development responds to **Policy JP-S2: Carbon and Energy** of the adopted *Places for Everyone Joint Development Plan 2022–2039*, with particular regard to minimising energy demand, maximising energy efficiency, reducing operational carbon emissions and incorporating low-carbon technologies where practicable.

The detailed energy performance of the dwelling will be developed and verified through the Building Regulations process. The dwelling will, as a minimum, be designed and constructed to comply with the applicable requirements of **Approved Document L, Volume 1: Dwellings**.

2. Policy Context

Places for Everyone – Policy JP-S2: Carbon and Energy

Policy JP-S2 seeks to support the transition towards a low-carbon and ultimately net-zero built environment.

Development proposals are expected to demonstrate how energy demand and associated carbon emissions have been minimised through an energy hierarchy which prioritises:

1. **Reducing the need for energy** through good passive design and an efficient building fabric;
2. **Using energy efficiently** through efficient building services and controls;
3. **Supplying energy from low and zero-carbon sources**, where appropriate and practicable; and
4. Minimising the residual operational carbon emissions associated with the development.

The proposed replacement dwelling has been designed with these principles in mind.

3. Energy Strategy

The proposed development comprises a single replacement dwelling. The energy strategy therefore adopts a proportionate **fabric-first approach**, with the objective of reducing the dwelling's inherent energy demand before considering the provision of energy through building services and low-carbon technologies.

3.1 Building Fabric

The replacement dwelling will incorporate a high-performance thermal envelope designed to meet or improve upon the requirements of Part L of the Building Regulations applicable at the time of construction.

The external walls, roof, ground floor, windows and external doors will incorporate appropriate levels of thermal insulation and high-performance components to minimise heat loss.

Particular attention will be given during detailed design and construction to:

- achieving low U-values through the external building envelope;
- limiting thermal bridging at junctions and openings;
- achieving good levels of airtightness;
- providing appropriately specified energy-efficient glazing;
- ensuring continuity of insulation around the thermal envelope; and
- controlling unwanted air leakage whilst maintaining appropriate ventilation.

These measures will reduce the dwelling's space-heating demand and consequently its operational energy consumption.

3.2 Passive Design

The detailed design of the dwelling will seek to make effective use of passive design measures, including natural daylight and ventilation.

Window openings will provide good levels of natural daylight to habitable accommodation, reducing reliance upon artificial lighting during daylight hours.

The specification of glazing, ventilation and other measures will also take account of the need to control summertime overheating in accordance with the applicable requirements of the Building Regulations, including Approved Document O where applicable.

3.3 Energy-Efficient Building Services

Building services will be selected and designed to minimise energy consumption.

Measures will include, as appropriate:

- high-efficiency space and water-heating systems;
- appropriate heating zones and time/temperature controls;
- energy-efficient ventilation;
- low-energy LED lighting throughout;
- efficient pumps and controls where required; and
- appropriately insulated hot-water distribution pipework.

The final specification will be coordinated with the dwelling's SAP assessment during the Building Regulations design stage.

4. Low-Carbon and Renewable Energy

The development will consider the use of low and zero-carbon technologies as part of the detailed Building Regulations design.

The proposed energy strategy will seek to avoid unnecessary reliance upon carbon-intensive fossil fuels and will investigate the suitability of an efficient electric heating solution, including an **air source heat pump**, subject to detailed design and technical assessment.

The suitability of **roof-mounted photovoltaic panels** will also be considered during the detailed design stage, taking account of roof orientation, available unshaded roof area, predicted electrical demand and the final SAP assessment.

The final combination and capacity of low-carbon and renewable technologies will be determined through detailed energy modelling to provide an efficient and technically appropriate solution for the replacement dwelling.

5. Building Regulations – Part L

The replacement dwelling will be required to comply with the applicable requirements of **Approved Document L, Volume 1: Dwellings**.

A full SAP assessment will be undertaken as part of the Building Regulations process. This will assess matters including:

- the dwelling's calculated energy performance;
- carbon dioxide emissions;
- primary energy consumption;
- fabric energy efficiency;
- thermal performance of individual building elements;
- airtightness;
- heating and hot-water efficiency; and
- contribution from renewable and low-carbon technologies.

The construction specification will be developed as necessary to demonstrate compliance with the relevant Part L performance targets prior to construction.

An as-built SAP assessment and Energy Performance Certificate will subsequently confirm the completed dwelling's energy performance.

6. Electric Vehicle Charging

In accordance with **Approved Document S – Infrastructure for the Charging of Electric Vehicles**, the replacement dwelling will be provided with an electric vehicle charging point serving its associated parking provision.

The charge point and associated electrical infrastructure will be designed and installed in accordance with the applicable Building Regulations and electrical installation requirements.

This will facilitate the use of electric vehicles and assist in reducing transport-related carbon emissions associated with occupation of the dwelling.

7. Construction and Materials

Where reasonably practicable, the detailed design and construction of the dwelling will also seek to reduce energy and resource consumption associated with construction.

This will include consideration of:

- responsibly sourced construction materials;
- durable materials with appropriate service lives;
- efficient use of materials;
- minimisation and appropriate management of construction waste;
- locally sourced materials where practical; and
- appropriate recycling and segregation of construction waste.

The replacement of the existing dwelling also provides the opportunity to deliver a significantly improved thermal envelope and building services installation when compared with the existing building.

8. Conclusion

The proposed replacement dwelling at 6 Wentworth Avenue has been designed around a **fabric-first energy hierarchy**, prioritising the reduction of energy demand before the provision of efficient building services and low-carbon energy technologies.

The proposal will:

- incorporate a highly insulated and energy-efficient building envelope;
- minimise heat loss and uncontrolled air leakage;
- utilise energy-efficient building services, lighting and controls;
- consider an air source heat pump and photovoltaic generation as part of the detailed energy strategy;
- be subject to a detailed SAP assessment;
- comply with the applicable requirements of Part L of the Building Regulations; and
- provide an electric vehicle charging point in accordance with Part S of the Building Regulations.

The precise building fabric, servicing and renewable energy specification will be confirmed through detailed design and SAP modelling at Building Regulations stage.

The proposal therefore demonstrates a clear strategy to **minimise energy demand, maximise energy efficiency and reduce operational carbon emissions**, consistent with the objectives and requirements of **Policy JP-S2: Carbon and Energy of the Places for Everyone Joint Development Plan**.