

WALKERDESIGN



Energy Conservation & Sustainability Statement

Project:

Starbucks Drive-Thru
Victoria Retail Park
Victoria Street
Bury
BL8 2EQ



1.0 Introduction

This energy statement summarises the means undertaken to reduce the energy demand and CO₂ emissions from the proposed development and sets out how the policies on energy and CO₂ in the new development has been addressed. The statement provides information relating to:

- The energy efficiency measures that have been incorporated into the refurbishment of the existing building in order to reduce the energy consumption of the site; and
- The low and zero carbon technologies that will be installed, a key aim in any development is to create sustainable and energy efficient development, as well as meeting the planning requirements of good design and policy.

The intention is to refurbish the existing building to accommodate a Drive-Thru lane and a Class E(a)/E(b) café within the building which aims at establishing employment and urban environment of the highest quality with minimal impact on the environment and surrounding community.

The Building Regulations set out certain criteria for commercial buildings and by 2020 buildings should have a 30% emission reduction from the levels in 1990 and 80% by 2050. The way to achieve this is by using renewable energy technologies which will form part of the design of the building in order to maximise opportunities for reducing the CO₂ emissions related to the development. The site's resources and the building's heat and power loads were assessed to establish which low and zero carbon technologies might be suitable for integration into the building:

1. Ensure the refurbishment to the existing building provide an improvement over the Part L2 requirements where possible.
2. Solar Hot Water generation will be considered for the site however this will not alone provide a 20% reduction in energy and CO₂ emissions.
3. Wind Turbines are not a viable proposition due to the average wind speed of the location being 5.2m/s which is below the minimum requirement of 6.0m/s.
4. Heat Pumps will be considered for use on the site as a viable LZC technology.
5. Energy metering and sub metering will be included as described within Approved Document Part L2a.
6. As the proposal includes works to an existing building, the air tightness will need to be confirmed as per the requirement of Approved Document Part L2a of 10m³/hr/m² @ 50Pa to 3m³/hr/m² for buildings under 500m²
7. A photovoltaic (PV) array for onsite energy production will be considered as part of the scheme.
8. Lighting installation to comprise of low energy LED systems.
9. Introduction of EV chargers onsite in line with Part S of the Building regulations. Refer to amended plan attached.

2.0 Planning Policy

National Planning Policy Framework (NPPF): Renewable Energy emphasises the need to increase the amount of renewable energy and low carbon technology to reduce emissions while stimulating investment in employment and business. Local Planning Authorities are empowered to include policies in their plans requiring a percentage of on-site renewable energy development within new developments. Compliance with the above policy has been addressed in each relevant section of this report, with the policies highlighted at the beginning of each section.

3.0 Building Fabric and Infiltration

The building facade is the key climatic modifier between the internal and external environments. The building needs to be well insulated and air-tight to minimise heat loss.

As a minimum, the thermal performance of the refurbished building will need to comply with Part L of the Building Regulations 2022. The 2016 requirements call for an additional 25% saving of CO₂ in comparison to the 2006 Regulations.

For the proposed development refers to the refurbishment of an existing building to accommodate a Drive-Thru lane and café. The following details have been considered in the external envelope of the building:

- a. The below details list out the existing construction elements performance used in the external envelope of the building as per – Building Element Building Regulations 2015:

	Current
Glazing	1.8 W/m ² k
External Walls	0.25 W/m ² k
Roof	0.15 W/m ² k
Floor	0.20 W/m ² k
External Doors	1.6 W/m ² k

- b. The current building regulations 2010 require that the air permeability of the building fabric does not exceed 10m³/h/m² at a pressure difference of 50 Pa for buildings under 500m². The air test achieved on the existing unit was **6.36 m³/hr/m² @ 50Pa**

As indicated above, the refurbishment works will aim to provide an improvement to certain (underlined) elements within the existing arrangement as per Building Element Building Regulations 2022:

c.	Proposed
<u>Glazing</u>	1.6 W/m ² k
<u>External Walls</u>	0.16 W/m ² k
Roof	0.15 W/m ² k
Floor	0.20 W/m ² k
External Doors	1.6 W/m ² k

The aim of our proposals is to retain or better the air tightness of the existing unit With an air pressure test target result of 6m³/hr/m².

All the above can be achieved by the selection of appropriate materials to match the targets outlined and existing materials.

4.0 Energy Strategy Conclusions

The energy strategy for the proposed commercial units has been developed by rigorously applying the energy hierarchy. Firstly, the energy has been reduced as far as possible by providing a well-insulated and air tight envelope, efficient heating and LED lighting installations will be considered to ensure that the building performs significantly better than the existing unit to such an extent that the building also complies with Part L calculations.

The building could be considered with a solar Photovoltaic (PV) array installation to ensure that the buildings energy use and CO2 generation is an improvement over that of the target Building Regulations Part L 2015 requirement.