HOUSE B

MELLOR BROOK

BB2 7PL

ENERGY STATEMENT

For:

Sunderland Peacock & Associates Ltd

March 2019

Project no. 8635

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MELLOR BROOK

BB2 7PL

ENERGY ASSESSMENT

SUNDERLAND PEACOCK & ASSOCIATES LTD

REVISION	DATE	PREPARED BY	REVIEWED BY	COMMENTS
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1.0 Introduction

1.1 About C80 Solutions Ltd

C80 Solutions are independent Sustainability and Energy Consultants providing carbon reduction solutions to help the UK achieve its carbon emission reduction target of 80% by 2050 - as set out in the Government's Climate Change Act 2008.

Our range of affordable but comprehensive solutions for the construction industry are broken down into two sectors; i) Building Compliance and ii) Consultancy.

Building Compliance:
Our Building Compliance services include; Code for Sustainable Homes Assessments, SAP Calculations, On Construction Energy Performance Certificates, Water Efficiency Calculations, SBEM Calculations, Commercial EPCs, BREEAM assessments and Air Tightness Testing.

Consultancy:
Our experience and exposure to building compliance combined with previous experience and IEMA accredited training means we have built up a vast amount of knowledge which enables us to provide our clients with invaluable advice. Our Consultancy services include; Renewable Energy Feasibility Reports, Energy Statements for planning, Sustainability Statements and Building Compliance Advisory Reports.

1.2 Introduction to Developments

C80 Solutions have been instructed by Sunderland Peacock & Associates Ltd to prepare an Energy Statement for the proposed residential new build development at Mellor Brook, BB2 7PL

The project assessed anticipates the provision of 1no 5 bed, detached house.

The plan of the proposed development can be seen in Figure 1 below.

Figure 1: Plan of the proposed detached house

This statement will demonstrate how the predicted CO2 emissions of the proposed development will be reduced by at least 10% compared with a typical 2013 Building Regulations Part L compliant building, as required by the Ribble Valley Borough Council.

1.3 Planning Policy

The following Energy/CO2 related planning policies are applicable to this development:

Policy 5.2 of the London Plan - Minimising Carbon Dioxide Emissions

Planning decisions

A Development proposals should make the fullest contribution to minimising carbon dioxide emissions in accordance with the following energy hierarchy:

1 Be lean: use less energy
2 Be clean: supply energy efficiently
3 Be green: use renewable energy

B The Mayor will work with boroughs and developers to ensure that major developments meet the following targets for carbon dioxide emissions reduction in buildings. These targets are expressed as minimum improvements over the Target Emission Rate (TER) outlined in the national Building Regulations leading to zero carbon residential buildings from 2016 and zero carbon non-domestic buildings from 2019.

Residential buildings:

Year	*Improvement on 2010 Building Regulations*
2010 – 2013	*25 per cent (Code for Sustainable Homes level 4)*
2013 – 2016	40 per cent
2016 – 2031	*Zero carbon*

Non-domestic buildings:

Year	*Improvement on 2010 Building Regulations*
2010 – 2013	*25 per cent*
2013 – 2016	*40 per cent*
2016 – 2019	*As per building regulations requirements*
2019 – 2031	*Zero carbon*

C Major development proposals should include a detailed energy assessment to demonstrate how the targets for carbon dioxide emissions reduction outlined above are to be met within the framework of the energy hierarchy.

D As a minimum, energy assessments should include the followingdetails:

1. *Calculation of the energy demand and carbon dioxide emissions covered by Building Regulations and, separately, the energy demand and carbon dioxide emissions from any other part of the development, including plant or equipment, that are not covered by the Building Regulations at each stage of the energy hierarchy*
2. *Proposals to reduce carbon dioxide emissions through the energy efficient design of the site, buildings and services*

3. *Proposals to further reduce carbon dioxide emissions through the use of decentralised energy where feasible, such as district heating and cooling and combined heat and power (CHP)*
4. *Proposals to further reduce carbon dioxide emissions through the use of on-site renewable energy technologies.*

E The carbon dioxide reduction targets should be met on-site. Where it is clearly demonstrated that the specific targets cannot be fully achieved on-site, any shortfall may be provided off-site or through a cash in lieu contribution to the relevant borough to be ring fenced to secure delivery of carbon dioxide savings elsewhere.

1.4 Methodology

The methodology that has been applied in this report is as follows:

1. Prepare baseline energy calculations for the site based on a Part L 2013 compliant construction specification designed for the development.

2. From the baseline energy calculations, the predicted energy demand for the development in kWh/year and the predicted CO2 emissions in kgCO2/year for the site can be established.

3. Multiplying the site wide predicted CO2 emissions figure by 10% will provide the CO2 reduction target required.

4. Apply energy efficient design principles (improved fabric spec) in order to reduce the energy demand and CO2 emissions of the site. Prepare energy calculations using the improved fabric specification.

5. From these improved calculations, the reduced energy demand for the development in kWh/year and the predicted CO2 emissions in kgCO2/year for the site can be established.

6. Carry out a renewable energy feasibility study to ascertain which LZC technologies would be suitable for the development.

Establish the sizing of suitable renewable technologies to ensure the 10% CO2 emission reduction target is met.

2.0 Predicted Annual Carbon Emissions

Baseline SAP 2012 calculations were prepared based on the construction specification shown in table 1 below.

Aspect		New Build
Fabric U-values W/m²K	Ground Floor	0.17
	External Walls	0.17
	Pitched Rafters	0.14
	Pitched Joists	0.14
	Windows	1.6
	Doors	1.6
	Party Walls	N/A
	Thermal Bridging	ACDs
Ventilation	Airtightness m3/(hr.m²)	5
Heating	Boiler	Gas boiler & rads (min 89% efficiency)
	Compensator	none
	Hot Water	From main system
	Controls	Time and temperature zone controls
	Secondary Heating	N/A
Low energy lighting		100%
Ventilation		Natural ventilation with extracts
Renewables / LZC		None

Table 1: Part L compliant construction specifications

The conducted SAP calculations have shown the proposed development will generate **3,083 kgCO2/year**. In order to satisfy the planning policies on CO2 reduction, the developer is committed to reduce predicted site wide CO2 emissions by 10% through the use of renewable resources only.

Therefore, since the development's predicted CO2 emissions is 3,083 kgCO2/yr, this would equate to a reduction target of **308 kgCO2/yr**. In other words, providing the total site emissions comes to equal to or less than **2,775 kgCO2/yr** (3,083-308) is achieved once improvements have been made to the calculations, this would prove that the 10% reduction target has been met.