



## **PITT STREET PHASE 2, DARFIELD**

## **SUSTAINABILITY STATEMENT**

**July 2025**

## Introduction

This report has been prepared by Award Energy Consultants on behalf of Alphin Property in connection with a planning application for a residential development of up to 205 dwellings at Pitt Street Phase 2, Darfield. This report considers the issues surrounding sustainable construction with regards to the proposed residential development. In particular, it considers and evaluates the measures incorporated into the design of the development to reduce the predicted carbon emissions, energy demand and water usage of the site as per Barnsley Metropolitan Borough Council's development policies.

## Policy Context

The following documents were considered:

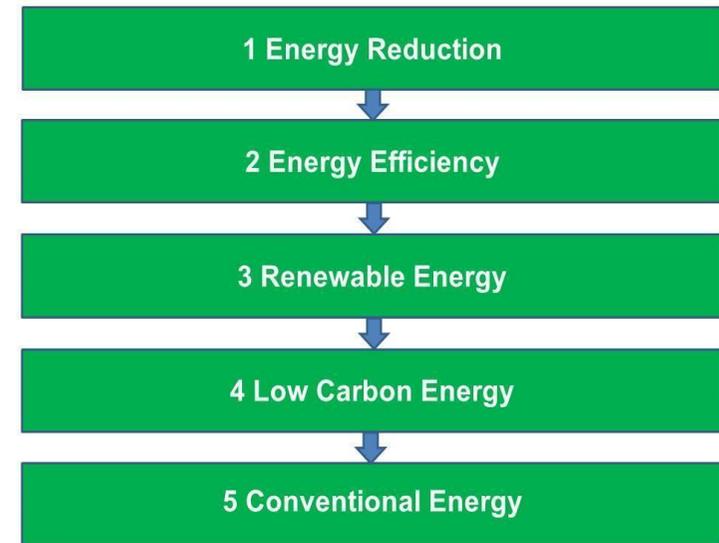
**Building Regulations Part L1 2021** – Part L1 sets minimum standards for fabric, energy efficiency and carbon emissions for new build dwellings. Whilst the proposed dwellings are likely to be built to the Future Homes Standards, the consultation for its implementation has not yet been concluded and therefore this Report is grounded in Part L1 2021 which are the regulations in force at the time of writing

**National Planning Policy Framework 2024** – strengthens the emphasis on sustainable development, and requires new developments to secure the highest viable resource and energy efficiency and reduction in emissions by considering Governments and other national standards

**Barnsley Metropolitan Borough Council's Supplementary Planning Document – Sustainable Construction and Climate Change Adaptation** – guidance on requirements for development in respect of sustainable construction and adapting to climate change.

## Energy Hierarchy

Award Energy have been instructed to assess the potential energy efficiencies and carbon emission reductions that can be achieved through aligning with the Government's Energy Hierarchy as required by Barnsley MBC's Planning Policies. Design teams are required to apply the following steps to reduce carbon emissions through the steps outlined below:



## Step 1 - Energy Reduction

The first step of the hierarchy requires developments to use less energy through passive design measures including the maximisation of solar heating and reducing heat loss and meeting the requirements to reduce energy consumption and introduce energy efficiency

- The development layout has been designed to maximise a north-south orientation to allow for passive design whereby dual aspect dwellings enable views, good daylighting and cross ventilation
- Internally, the accommodation will be laid out to maximise the internal space and light afforded, with primary habitable rooms benefitting from a southern orientation. Each of the principal living rooms will have sufficient glazing to allow natural light to penetrate the rooms, reducing the need for artificial lighting
- The construction specification of every home will include high levels of insulation in the ground floor, external walls and roof spaces and all fabric elements will have u-values lower than those required by Part L 2021
- High levels of air tightness to be achieved within the construction of the dwelling to reduce unnecessary heat loss; all dwellings will be tested for air leakage
- All dwellings will meet the requirements of Approved Document Part O: Overheating, utilising an appropriate glazing specification and opening areas to minimise solar gain and allow purge ventilation
- All houses will benefit from a garden or private space for recreation, thus allowing external space for recreation and clothes drying

## Step 2 - Energy Efficiency

- Energy efficient lamps will be installed in every light fitting. Each entrance will be illuminated with an energy efficient external light with appropriate controls to avoid unnecessary use
- Highly efficient Heat Pumps are anticipated to provide space and water heating, although the precise M&E specification has not yet been decided. These will be accompanied by thermostatic controls, zoned heating and programmers to ensure that heating is optimally controlled to use the least amount of energy
- The design team propose using natural ventilation via background/trickle ventilation, opening windows and wet room extraction.
- Electric Vehicle Charging Points or Bollards will be provided for each dwelling in line with Part S

## Step 3 – Renewable Energy

In the absence of a local District Heating Network, the design team propose to install renewable technology in the form of Heat Pumps. The proposed M&E design has not yet been finalised and, whilst the options for both Air Source and Ground Source Heat Pumps will be explored, the figures in this Report are produced using Air Source Heat Pumps.

## Material Selection

The production, transportation, and disposal of building materials consume substantial energy and natural resources. Sourcing building materials involves two critical aspects: their environmental impact and the process of procurement. The development team is committed to adopting proactive strategies to address these concerns in collaboration with the principal contractor.

## Pollution

The dwellings will be constructed with insulating materials that have a Global Warming Potential of less than 5. In addition, all dwellings will be heated by highly efficient heat pumps that will emit no onsite NOx emissions.

## Waste

The proposed development will promote resource efficiency via the effective management and reduction of construction waste. The principal contractor will be encouraged to develop a site-specific Waste Management Plan which will detail the individuals responsible for resource management, the types of waste that will be generated and how the waste will be managed on site (e.g. reduce, reuse, or recycle). Site demolition waste will be crushed and used as hardcore where feasible.

All construction activities will be carried out to minimise dust, fumes, discharges and any other form of pollution on site, in line with best practice policies.

## Energy Efficiency & Carbon Emissions

In order to evaluate the proposed energy strategy, it is important to determine firstly the baseline. This is the level of energy efficiency against which any strategy must be judged using a selection of proposed house types and the standard specification that shows compliance with Building Regulations.

Whilst the precise constructions specification has yet to be finalised, Award Energy have compared a reasonable proposed enhanced specification with a specification that will achieve minimum compliance with Part L1 2021, as shown in Table 1. Within the enhanced specification, all heat loss elements have been insulated beyond regulation.

**Table 1**

Element	Value required by AD Part L1 2021 (u-value)	Enhanced specification (u-value)
Walls (w/m <sup>2</sup> k)	0.26	0.25
Party Walls (w/m <sup>2</sup> k)	0.20	0.00
Roofs (w/m <sup>2</sup> k)	0.16	0.11
Floors (w/m <sup>2</sup> k)	0.18	0.15
Windows (w/m <sup>2</sup> k)	1.6	0.86
Doors (w/m <sup>2</sup> k)	1.6	1.2
Design air pressure test (m <sup>3</sup> /h/m <sup>2</sup> )	8	4.5

As the precise house type designs have not yet been decided, the following Carbon Emission and Fabric Energy calculations have been produced for a sample of typical dwelling types only and not weighted to establish a site-wide figure.

## Carbon Reduction Calculations

Award Energy have compared the specification that will achieve minimum compliance with Part L1 2021 with the reasonable enhanced specification as shown in Table 1 and the installation of Air Source Heat Pumps.

**Table 2**

Dwelling Type	Carbon Emissions (KgCO <sub>2</sub> /Year/m <sup>2</sup> ) Baseline specification TER	Carbon Emissions (KgCO <sub>2</sub> /Year/m <sup>2</sup> ) Enhanced specification DER	% reduction in Carbon Emissions Over Part L1 2021	% reduction in Carbon Emissions Over Part L1a 2013
Mid-Terrace	9.91	2.88	<b>70.94%</b>	<b>101.94%</b>
Semi-Detached	10.22	3.95	<b>61.35%</b>	<b>92.35%</b>
Detached	8.97	3.52	<b>60.76%</b>	<b>91.76%</b>

\*calculated using SAP10 software

## Fabric Energy Demand Calculations

Using SAP10 software and the reasonable specification detailed in Table 1, the predicted Fabric Energy Demand for a sample of dwelling types in kWh/m<sup>2</sup> per year was calculated, as shown in Table 3 below.

**Table 3**

Dwelling Type	Fabric Energy Demand (kWh/m <sup>2</sup> /yr) Baseline specification	Fabric Energy Demand (kWh/m <sup>2</sup> /yr) Enhanced specification	% Reduction in Fabric Energy Demand above Part L1 2021
Mid-Terrace	26.80	24.06	10.21%
Semi-Detached	33.27	31.38	5.69%
Detached	41.36	39.47	4.59%

\*calculated using SAP10 software

## Water Efficiency

Approved Document G (2010) restricts new build dwellings to a maximum consumption of 125 litres per person per day. Whilst the exact sanitaryware specification has yet to be decided, it is proposed that eco-sanitary ware and restricted flow rates will be introduced into the design of each dwelling to obtain the appropriate level of water efficiency.

The following table has been extracted from the Water Efficiency Calculator, demonstrating that 123.75 litres per person per day is anticipated. The exact makes and models are subject to change as the design is progressed, though any specification will achieve less than 125 litres per person per day.

Installation Type	Unit of Measurement	Capacity/Flow Rate	Use Factor	Fixed Use	Litres Per Person per day
WC (Dual Flush)	Full Flush (litres)	6	1.46	0.00	8.76
	Part Flush (litres)	4	2.96	0.00	11.84
Taps (excluding kitchen tap)	Flow rate (litres/minute)	6	1.58	1.58	11.06
Baths (where shower present)	Capacity to overflow (litres)	195	0.11	0.00	21.45
Showers (where bath present)	Flow rate (litres/minute)	10	4.37	0.00	43.7
Kitchen sink tap	Flow rate (litres/minute)	3.8	0.44	10.36	12.03
Washing Machine	Litres/kg dry load	8.17	2.1	0.00	17.16
Dishwasher	Litres/place setting	1.25	3.60	0.00	4.50
<b>TOTAL</b>					<b>130.50</b>
<b>Total Internal Water Consumption</b>	130.50				
<b>Normalisation Factor (x 0.91)</b>	118.75				
<b>External Use</b>	5.00				
<b>Part G Water Consumption</b>	<b>123.75</b>				

## Conclusion

This report demonstrates that the proposed enhanced fabric specification reduces Fabric Energy Demand by an average of **6.83%** over Part L1 2021 (approximately **21.83%** over Part L1a 2013). When combined with Air Source Heat Pumps, carbon emissions on the site are significantly reduced over the requirements of Part L1 2021 and serve to reduce the impacts of climate change. Furthermore, a specification providing water consumption of less than **125** litres per person per day is anticipated which, when combined with material selection and waste management policies, strengthens the sustainability of the development.

### Caveat

This document has been prepared for the titled project, or named part thereof, and should not be relied upon or used for any other project or part as the case may be, without an independent check being made on it. Award Energy shall not be liable for the consequences of using this document other than for the purpose for which it was commissioned, and any user and any other person using or relying on this document for such other purpose, agrees and will be such use or reliance be taken to confirm this agreement to indemnify Award Energy for all loss of damage resulting therefrom.