# PREDICTED ENERGY ASSESSMENT

Design SAP
elmhurst energy

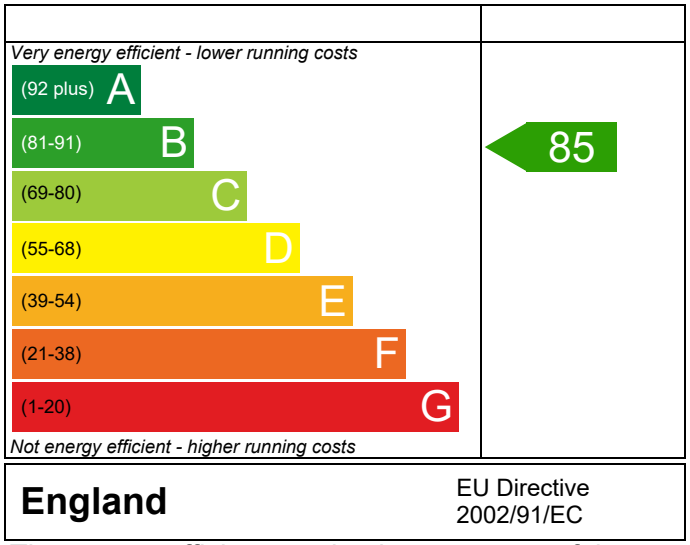
Plot 086, Rogerson Gardens,
Preston,
PR3

| | |
|---|---|
| Dwelling type: | House, Mid-Terrace |
| Date of assessment: | 29/04/2022 |
| Produced by: | Hazel Black |
| Total floor area: | 86.02 m² |
| DRRN: | 8222-2145-1091 |

This document is a Predicted Energy Assessment for properties marketed when they are incomplete. It includes a predicted energy rating which might not represent the final energy rating of the property on completion. Once the property is completed, this rating will be updated and an official Energy Performance Certificate will be created for the property. This will include more detailed information about the energy performance of the completed property.

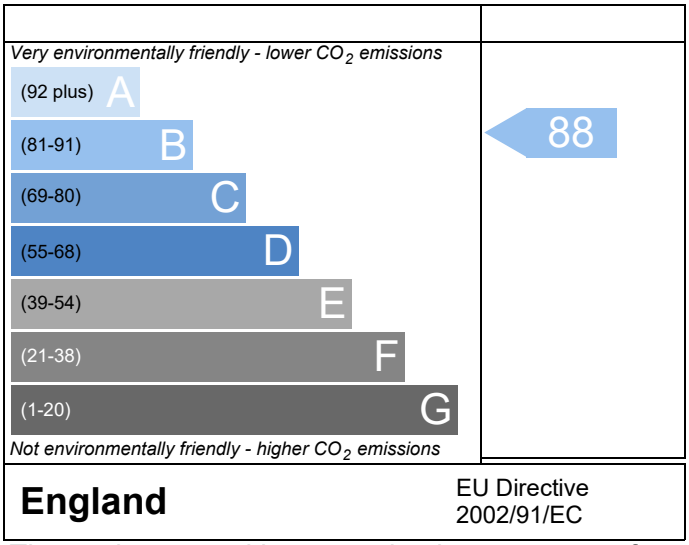
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide ($CO_2$) emissions.

## Energy Efficiency Rating




The energy efficiency rating is a measure of the overall efficiency of a home. The higher the rating the more energy efficient the home is and the lower the fuel bills are likely to be.

## Environmental Impact ($CO_2$) Rating




The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide ($CO_2$) emissions. The higher the rating the less impact it has on the environment.

*This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.*

elmhurst energy APPROVED ENERGY ASSESSOR

ELMHURST ENERGY QUALITY PROMISE ACCREDITED MEMBER



Regs Region: England
Elmhurst Energy Systems SAP2012 Calculator (Design System) version 4.14r19

# BUILDING REGULATION COMPLIANCE
# Calculation Type: New Build (As Designed)

Design SAP
elmhurst energy

| | | | |
|---|---|---|---|
| **Property Reference** | Plot 086 T52 MT | **Issued on Date** | 29/04/2022 |
| **Assessment Reference** | 1 | **Prop Type Ref** | |
| **Property** | Plot 086, Rogerson Gardens, Preston, PR3 | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 85 B | **DER** | 15.10 | **TER** | 16.59 |
| **Environmental** | 88 B | **% DER<TER** | 8.98 | | |
| **$CO_2$ Emissions (t/year)** | 1.17 | **DFEE** | 37.00 | **TFEE** | 42.43 |
| **General Requirements Compliance** | Pass | **% DFEE<TFEE** | 12.81 | | |

| | | | |
|---|---|---|---|
| **Assessor Details** | Ms. Hazel Black, Hazel Black, Tel: 01582 544250, hazelb@ee-ltd.co.uk | **Assessor ID** | M003-0001 |
| **Client** | | | |

## SUMARY FOR INPUT DATA FOR New Build (As Designed)

### Criterion 1 – Achieving the TER and TFEE rate

**1a TER and DER**

| | | | |
|---|---|---|---|
| Fuel for main heating | Mains gas | | |
| Fuel factor | 1.00 (mains gas) | | |
| Target Carbon Dioxide Emission Rate (TER) | 16.59 | $kgCO_2/m^2$ | |
| Dwelling Carbon Dioxide Emission Rate (DER) | 15.10 | $kgCO_2/m^2$ | Pass |
| | -1.49 (-9.0%) | $kgCO_2/m^2$ | |

**1b TFEE and DFEE**

| | | | |
|---|---|---|---|
| Target Fabric Energy Efficiency (TFEE) | 42.43 | $kWh/m^2/yr$ | |
| Dwelling Fabric Energy Efficiency (DFEE) | 37.00 | $kWh/m^2/yr$ | |
| | -5.4 (-12.7%) | $kWh/m^2/yr$ | Pass |

### Criterion 2 – Limits on design flexibility

#### Limiting Fabric Standards

**2 Fabric U-values**

| Element | Average | Highest | |
|---|---|---|---|
| External wall | 0.27 (max. 0.30) | 0.27 (max. 0.70) | Pass |
| Party wall | 0.00 (max. 0.20) | - | Pass |
| Floor | 0.13 (max. 0.25) | 0.13 (max. 0.70) | Pass |
| Roof | 0.11 (max. 0.20) | 0.11 (max. 0.35) | Pass |
| Openings | 1.28 (max. 2.00) | 1.41 (max. 3.30) | Pass |

**2a Thermal bridging**

Thermal bridging calculated from linear thermal transmittances for each junction

**3 Air permeability**

| | | | |
|---|---|---|---|
| Air permeability at 50 pascals | 5.01 (design value) | $m^3/(h.m^2)$ @ 50 Pa | |
| Maximum | 10.0 | $m^3/(h.m^2)$ @ 50 Pa | Pass |

#### Limiting System Efficiencies

**4 Heating efficiency**

| | | | |
|---|---|---|---|
| Main heating system | Boiler system with radiators or underfloor - Mains gas<br>Data from database<br>Ideal LOGIC COMBI ESP1 35<br>Combi boiler<br>Efficiency: 89.6% SEDBUK2009<br>Minimum: 88.0% | | Pass |
| Secondary heating system | None | | |

**5 Cylinder insulation**

| | | | |
|---|---|---|---|
| Hot water storage | No cylinder | | |

**6 Controls**

| | | | |
|---|---|---|---|
| Space heating controls | Time and temperature zone control | | Pass |
| Hot water controls | No cylinder | | |
| Boiler interlock | Yes | | Pass |

**7 Low energy lights**

| | | | |
|---|---|---|---|
| Percentage of fixed lights with low-energy fittings | 100 | % | |
| Minimum | 75 | % | Pass |

**8 Mechanical ventilation**

Not applicable

## Criterion 3 – Limiting the effects of heat gains in summer

**9 Summertime temperature**

| | | | |
|---|---|---|---|
| Overheating risk (West Pennines (England)) | Not significant | | Pass |

Based on:

| | |
|---|---|
| Overshading | Average |
| Windows facing North East<br>Windows facing South West | 4.10 m², No overhang<br>4.89 m², No overhang |
| Air change rate | 4.00 ach |
| Blinds/curtains | Dark-coloured curtain or roller blind, closed 100% of daylight hours |

## Criterion 4 – Building performance consistent with DER and DFEE rate

### Party Walls

| Type | U-value | | |
|---|---|---|---|
| Filled Cavity with Edge Sealing | 0.00 | W/m²K | Pass |

### Air permeability and pressure testing

**3 Air permeability**

| | | | |
|---|---|---|---|
| Air permeability at 50 pascals | 5.01 (design value) | m³/(h.m²) @ 50 Pa | |
| Maximum | 10.0 | m³/(h.m²) @ 50 Pa | Pass |

**10 Key features**

| | | |
|---|---|---|
| Party wall U-value | 0.00 | W/m²K |
| Roof U-value | 0.11 | W/m²K |
| Door U-value | 1.00 | W/m²K |

*This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.*

# RECOMMENDATIONS

Design SAP
elmhurst energy

| | Typical cost | Typical savings per year | Energy efficiency | Environmental impact | Result |
|---|---|---|---|---|---|
| Low energy lights | | | 0 | 0 | Already installed |
| Solar water heating | £4,000 - £6,000 | £25 | B 86 | B 90 | Recommended |
| Photovoltaic | £3,500 - £5,500 | £332 | A 96 | A 99 | Recommended |
| Wind turbine | | | 0 | 0 | Not applicable |
| **Totals** | **£7,500 - £11,500** | **£357** | **A 96** | **A 99** | |

*This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.*