# PREDICTED ENERGY ASSESSMENT

AES Sustainability Consultants

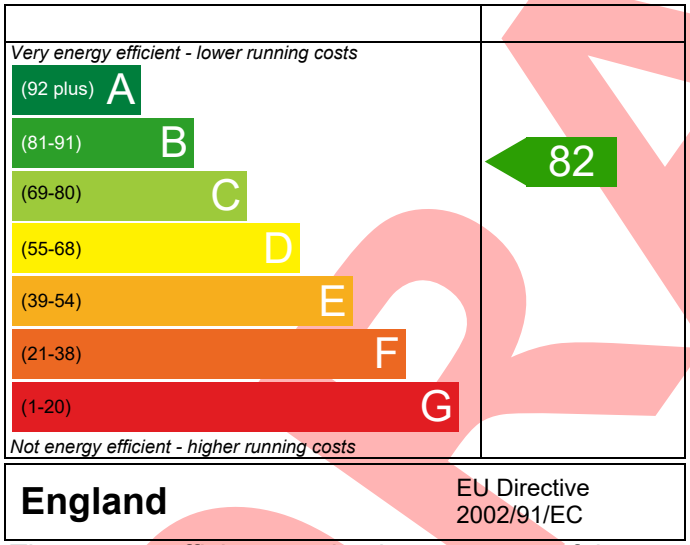
Plot 376, 2 bed,
K, B, ES,
2

| | |
|---|---|
| Dwelling type: | Flat, Mid-Terrace |
| Date of assessment: | 12/05/2023 |
| Produced by: | Eloise Utley |
| Total floor area: | 71.21 m² |

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.

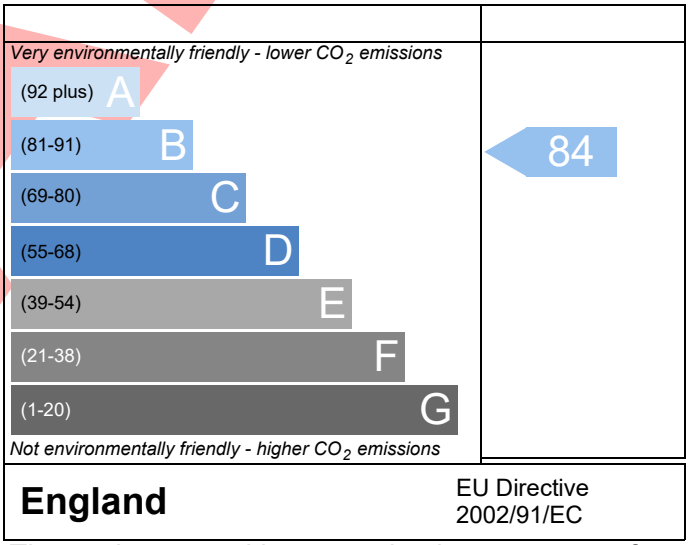
## Energy Efficiency Rating




**England** EU Directive 2002/91/EC

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




**England** EU Directive 2002/91/EC

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.

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

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| | | | |
|---|---|---|---|
| Property Reference | 4907-0015-4290-376 | Issued on Date | 12/05/2023 |
| Assessment Reference | Plot 376 | Prop Type Ref | C 2F 2A (Mid) |
| Property | Plot 376, 2 bed, K, B, ES, 2 | | |

| | | | | | |
|---|---|---|---|---|---|
| SAP Rating | 82 B | DER | 22.72 | TER | 20.35 |
| Environmental | 84 B | % DER<TER | -11.66 | | |
| $CO_2$ Emissions (t/year) | 1.31 | DFEE | 31.08 | TFEE | 30.20 |
| General Requirements Compliance | Fail | % DFEE<TFEE | -2.91 | | |

| | | | |
|---|---|---|---|
| Assessor Details | Ms. Eloise Utley, Eloise Utley , Tel: 01884 242 050, Eloise.Utley@aessc.co.uk | Assessor ID | T714-0001 |
| Client | Keepmoat, 4290 | | |

## 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 | Electricity | | |
| Fuel factor | 1.55 (electricity) | | |
| Target Carbon Dioxide Emission Rate (TER) | 20.35 | $kgCO_2/m^2$ | |
| Dwelling Carbon Dioxide Emission Rate (DER) | 22.72 | $kgCO_2/m^2$ | |
| Excess emissions | 2.37 (11.6%) | $kgCO_2/m^2$ | Fail |

**1b TFEE and DFEE**

| | | | |
|---|---|---|---|
| Target Fabric Energy Efficiency (TFEE) | 30.20 | $kWh/m^2/yr$ | |
| Dwelling Fabric Energy Efficiency (DFEE) | 31.08 | $kWh/m^2/yr$ | |
| Excess energy | 0.9 (3.0%) | $kWh/m^2/yr$ | Fail |

### Criterion 2 – Limits on design flexibility

#### Limiting Fabric Standards

**2 Fabric U-values**

| Element | Average | Highest | |
|---|---|---|---|
| External wall | 0.17 (max. 0.30) | 0.20 (max. 0.70) | Pass |
| Party wall | 0.00 (max. 0.20) | - | Pass |
| Openings and curtain wall | 1.40 (max. 2.00) | 1.40 (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 | 4.00 (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 | Room heaters - Electric<br>Panel, convector or radiant heaters | |
| Secondary heating system | None | |

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**5 Cylinder insulation**

| | | |
|---|---|---|
| Hot water storage | Measured cylinder loss: 1.18 kWh/day<br>Permitted by DBSCG 1.85 | Pass |
| Primary pipework insulated | No primary pipework | |

**6 Controls**

| | | |
|---|---|---|
| Space heating controls | Programmer and appliance thermostats | Pass |
| Hot water controls | Cylinderstat | Pass |

**7 Low energy lights**

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

**8 Mechanical ventilation**

| | | |
|---|---|---|
| Continuous supply and extract system | | |
| Specific fan power | 0.61 | |
| Maximum | 1.5 | Pass |
| MVHR efficiency | 93 % | |
| Minimum | 70 % | Pass |

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

**9 Summertime temperature**

| | | |
|---|---|---|
| Overheating risk (Thames Valley) | Medium | Pass |

Based on:

| | |
|---|---|
| Overshading | Average |
| Windows facing East | 10.86 m², No overhang |
| Windows facing South | 10.07 m², No overhang |
| Air change rate | 4.00 ach |
| Blinds/curtains | None |

## 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 |
| Filled Cavity with Edge Sealing | 0.00 | W/m²K | Pass |

### Air permeability and pressure testing

**3 Air permeability**

| | | | |
|---|---|---|---|
| Air permeability at 50 pascals | 4.00 (design value) | m³/(h.m²) @ 50 Pa | |
| Maximum | 10.0 | m³/(h.m²) @ 50 Pa | Pass |

**10 Key features**

| | | |
|---|---|---|
| External wall U-value | 0.14 | W/m²K |
| Party wall U-value | 0.00 | W/m²K |
| Party wall U-value | 0.00 | W/m²K |
| Door U-value | 1.10 | W/m²K |
| Door U-value | 1.09 | W/m²K |

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| | Typical cost | Typical savings per year | Energy efficiency | Environmental impact | Result |
|---|---|---|---|---|---|
| Low energy lights | | | 0 | 0 | Already installed |
| Solar water heating | | | 0 | 0 | Not applicable |
| Photovoltaic | | | 0 | 0 | Not applicable |
| Wind turbine | | | 0 | 0 | Not applicable |
| **Totals** | **£0** | **£0** | **B 82** | **B 84** | |

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