# PREDICTED ENERGY ASSESSMENT

AES Sustainability Consultants

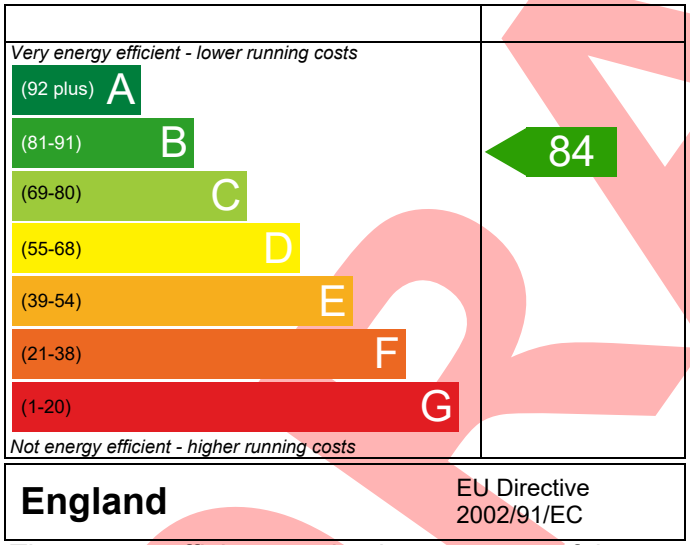
L219, 3 Bed,
K, WC, B, ES

| | |
|---|---|
| Dwelling type: | House, Semi-Detached |
| Date of assessment: | 12/01/2023 |
| Produced by: | Silvio Junges |
| Total floor area: | 80.36 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.

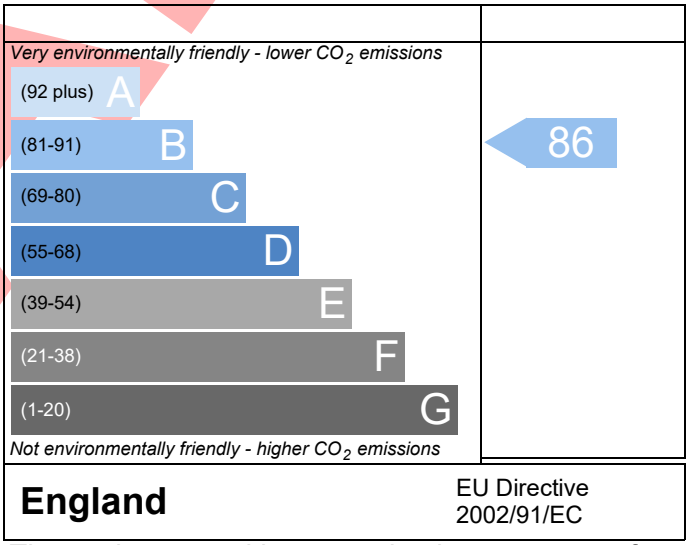
## Energy Efficiency Rating




**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-P637-6196-L219 | **Issued on Date** | 12/01/2023 |
| **Assessment Reference** | L219 | **Prop Type Ref** | Eveleigh Semi AS |
| **Property** | L219, 3 Bed, K, WC, B, ES | | |

| | | | | | |
|---|---|---|---|---|---|
| **SAP Rating** | 84 B | **DER** | 17.94 | **TER** | 18.16 |
| **Environmental** | 86 B | **% DER<TER** | 1.18 | | |
| **$CO_2$ Emissions (t/year)** | 1.19 | **DFEE** | 45.56 | **TFEE** | 50.20 |
| **General Requirements Compliance** | Pass | **% DFEE<TFEE** | 9.25 | | |

| | | | |
|---|---|---|---|
| **Assessor Details** | Miss Maja Stanisz, Maja Stanisz, Tel: 01392 581 875, maja.stanisz@aessc.co.uk | **Assessor ID** | P637-0001 |
| **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) | 18.16 | $kgCO_2/m^2$ | |
| Dwelling Carbon Dioxide Emission Rate (DER) | 17.94 | $kgCO_2/m^2$ | Pass |
| | -0.22 (-1.2%) | $kgCO_2/m^2$ | |

**1b TFEE and DFEE**

| | | | |
|---|---|---|---|
| Target Fabric Energy Efficiency (TFEE) | 50.20 | $kWh/m^2/yr$ | |
| Dwelling Fabric Energy Efficiency (DFEE) | 45.56 | $kWh/m^2/yr$ | |
| | -4.6 (-9.2%) | $kWh/m^2/yr$ | Pass |

### Criterion 2 – Limits on design flexibility

#### Limiting Fabric Standards

**2 Fabric U-values**

| Element | Average | Highest | |
|---|---|---|---|
| External wall | 0.25 (max. 0.30) | 0.25 (max. 0.70) | Pass |
| Party wall | 0.00 (max. 0.20) | - | Pass |
| Floor | 0.18 (max. 0.25) | 0.18 (max. 0.70) | Pass |
| Roof | 0.17 (max. 0.20) | 0.17 (max. 0.35) | Pass |
| Openings | 1.33 (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 | 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**



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| | | | |
|---|---|---|---|
| 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 | Programmer, room thermostat and TRVs | | 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 (Thames Valley) | Slight | Pass |

Based on:

| | | |
|---|---|---|
| Overshading | Average | |
| Windows facing North East<br>Windows facing South West | 4.53 m², No overhang<br>6.99 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 |

### 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 |
| Door U-value | 0.90 | W/m²K |
| Window U-value | 0.90 | W/m²K |
| Thermal bridging y-value | 0.036 | W/m²K |



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# RECOMMENDATIONS

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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 | £4,000 - £6,000 | £26 | B 85 | B 88 | Recommended |
| Photovoltaic | £3,500 - £5,500 | £373 | A 95 | A 98 | Recommended |
| Wind turbine | | | 0 | 0 | Not applicable |
| **Totals** | **£7,500 - £11,500** | **£398** | **A 95** | **A 98** | |



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