

# PREDICTED ENERGY ASSESSMENT

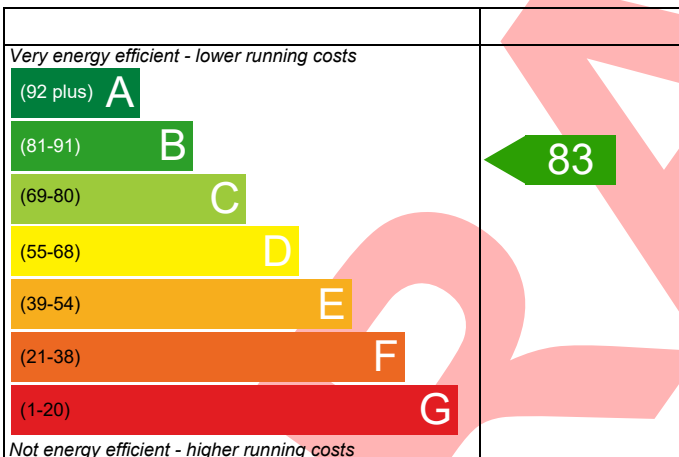
Plot 213, 3 Bed,  
K, WC, B

Dwelling type: House, End-Terrace  
Date of assessment: 01/09/2020  
Produced by: Andrew McManus  
Total floor area: 84.08 m<sup>2</sup>

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<sub>2</sub>) emissions.

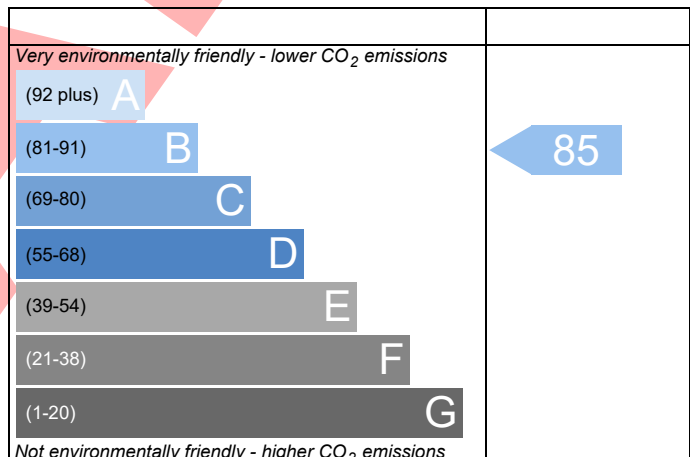
## Energy Efficiency Rating



**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<sub>2</sub>) 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<sub>2</sub>) 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)



|                                    |   |               |                |             |           |
|------------------------------------|---|---------------|----------------|-------------|-----------|
| Property Reference                 | 4907-0023-4605-213  |               | Issued on Date | 01/09/2020  |           |
| Assessment Reference               | 213   | Prop Type Ref | A32 - End (Op) |             |           |
| Property                           | Plot 213, 3 Bed, K, WC, B   |               |                |             |           |
| SAP Rating                         | 83 B  | DER           | 18.68          | TER         | 18.73     |
| Environmental                      | 85 B  | % DER<TER     | 0.26           |             |           |
| CO <sub>2</sub> Emissions (t/year) | 1.35  | DFEE          | 48.61          | TFEE        | 52.52     |
| General Requirements Compliance    | Pass  | % DFEE<TFEE   | 7.45           |             |           |
| Assessor Details                   | Mr. Andrew McManus, Andrew McManus, Tel: 01455 883250, andrew.mcmanus@aessc.co.uk |               |                | Assessor ID | P638-0001 |
| Client                             |   |               |                |             |           |

### SUMMARY 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)   | 18.73            | kgCO <sub>2</sub> /m <sup>2</sup> |      |
| Dwelling Carbon Dioxide Emission Rate (DER) | 18.68            | kgCO <sub>2</sub> /m <sup>2</sup> | Pass |
|   | -0.05 (-0.3%)    | kgCO <sub>2</sub> /m <sup>2</sup> |      |

##### 1b TFEE and DFEE

|  |              |                        |      |
|--|--------------|------------------------|------|
| Target Fabric Energy Efficiency (TFEE)   | 52.52        | kWh/m <sup>2</sup> /yr |      |
| Dwelling Fabric Energy Efficiency (DFEE) | 48.61        | kWh/m <sup>2</sup> /yr |      |
|  | -3.9 (-7.4%) | kWh/m <sup>2</sup> /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          | 0.18 (max. 0.20) | 0.18 (max. 0.35) | Pass |
| Openings      | 1.33 (max. 2.00) | 1.50 (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 <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa |      |
| Maximum                        | 10.0                | m <sup>3</sup> /(h.m <sup>2</sup> ) @ 50 Pa | Pass |

##### Limiting System Efficiencies

##### 4 Heating efficiency

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# BUILDING REGULATION COMPLIANCE

## Calculation Type: New Build (As Designed)

Main heating system

Boiler system with radiators or underfloor - Mains gas  
Data from database  
Ideal LOGIC COMBI ESP1 35  
Combi boiler  
Efficiency: 89.6% SEDBUK2009  
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 (Severn Valley)

Not significant

Pass

Based on:

Overshading

Average

Windows facing North East

3.26 m<sup>2</sup>, No overhang

Windows facing South West

4.12 m<sup>2</sup>, 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/m<sup>2</sup>K

Pass

### Air permeability and pressure testing

#### 3 Air permeability

Air permeability at 50 pascals

5.01 (design value) m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa

Maximum

10.0 m<sup>3</sup>/(h.m<sup>2</sup>) @ 50 Pa

Pass

### 10 Key features

Party wall U-value

0.00

W/m<sup>2</sup>K

Door U-value

0.90

W/m<sup>2</sup>K

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# RECOMMENDATIONS

|                     | 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         | £29                      | B 84              | B 87                 | Recommended       |
| Photovoltaic        | £3,500 - £5,500         | £341                     | A 95              | A 97                 | Recommended       |
| Wind turbine        |                         |                          | 0                 | 0                    | Not applicable    |
| <b>Totals</b>       | <b>£7,500 - £11,500</b> | <b>£370</b>              | <b>A 95</b>       | <b>A 97</b>          |                   |

**DRAFT**

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