

# PREDICTED ENERGY ASSESSMENT



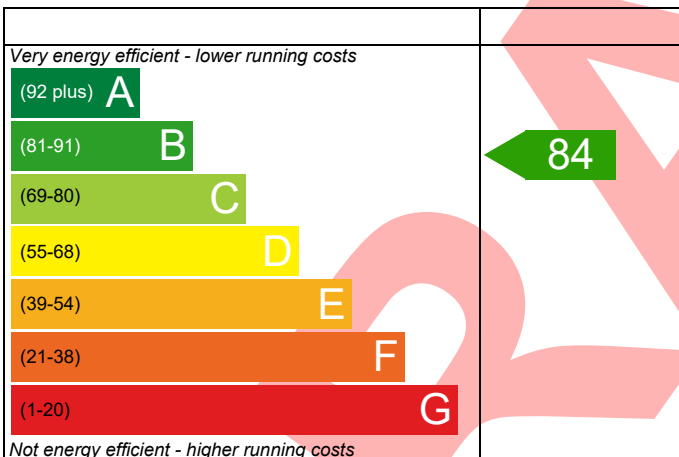
Plot 33, Land off Hawks Road,  
Welton,  
Lincoln,  
LN2 3BS

Dwelling type: House, Semi-Detached  
Date of assessment: 19/07/2022  
Produced by: Jake Eaton  
Total floor area: 81.47 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.

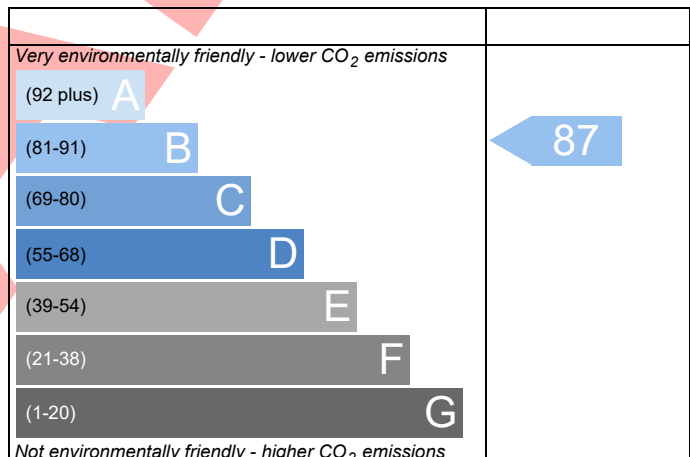
## Energy Efficiency Rating



**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.

This report has not been submitted through the Elmhurst Energy members' portal, therefore results are subject to change when the dwelling is completed.

# BUILDING REGULATION COMPLIANCE

## Calculation Type: New Build (As Designed)



Property Reference	LN2 3BS Plot 33	Issued on Date	19/07/2022
Assessment Reference	001	Prop Type Ref	Greenwich (Type B)
Property	Plot 33, Land off Hawks Road, Welton, Lincoln, LN2 3BS		
SAP Rating	84 B	DER	17.48
Environmental	87 B	TER	18.48
CO <sub>2</sub> Emissions (t/year)	1.26	% DER<TER	5.42
General Requirements Compliance	Pass	DFEE	44.86
		TREE	52.67
		% DFEE<TFEE	14.83
Assessor Details	Mr. Jake Eaton, Jake Eaton, Tel: 01400283471, jake@aeratech.co.uk	Assessor ID	P711-0001
Client			

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

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

##### 1a TER and DER

Fuel for main heating	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	18.48	kgCO <sub>2</sub> /m <sup>2</sup>	
Dwelling Carbon Dioxide Emission Rate (DER)	17.48	kgCO <sub>2</sub> /m <sup>2</sup>	Pass
	-1.00 (-5.4%)	kgCO <sub>2</sub> /m <sup>2</sup>	

##### 1b TFE and DFEE

Target Fabric Energy Efficiency (TFEE)	52.67	kWh/m <sup>2</sup> /yr	
Dwelling Fabric Energy Efficiency (DFEE)	44.86	kWh/m <sup>2</sup> /yr	
	-7.8 (-14.8%)	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	0.19 (max. 0.30)	0.19 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.14 (max. 0.25)	0.14 (max. 0.70)	Pass
Roof	0.11 (max. 0.20)	0.12 (max. 0.35)	Pass
Openings	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	7.00 (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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## Calculation Type: New Build (As Designed)



Main heating system

Boiler system with radiators or underfloor - Mains gas  
Data from database  
Vaillant ecoFIT sustain 835 VUW 356/6-3 (H-GB)  
Combi boiler  
Efficiency: 89.3% 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 (East Pennines)

Slight

Pass

Based on:

Overshading

Average

Windows facing North

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

Windows facing East

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

Windows facing South

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

Air change rate

2.50 ach

Blinds/curtains

Light-coloured curtain or roller blind, closed 50% 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/m<sup>2</sup>K

Pass

### Air permeability and pressure testing

#### 3 Air permeability

Air permeability at 50 pascals

7.00 (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

Roof U-value

0.11

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

Roof U-value

0.12

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

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