

PREDICTED ENERGY ASSESSMENT

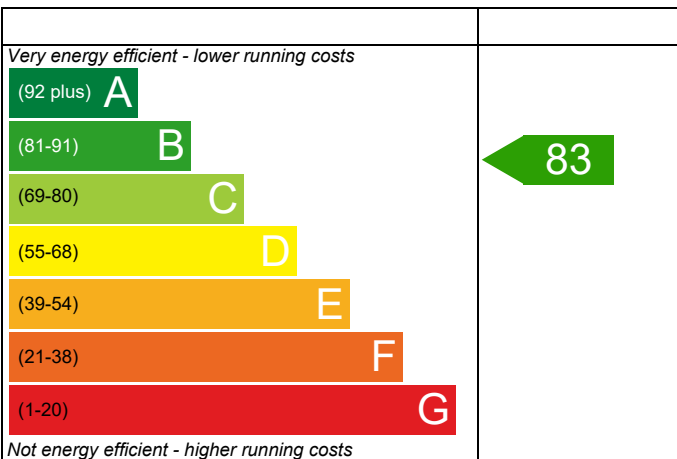
Plot 19

Dwelling type: House, End-Terrace
 Date of assessment: 08/12/2021
 Produced by: Michael Juckes
 Total floor area: 70.34 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 (CO₂) emissions.

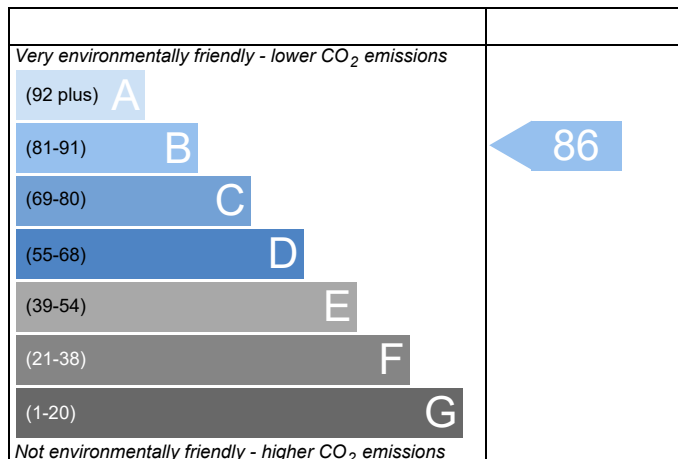
Energy Efficiency Rating



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 (CO₂) 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 (CO₂) emissions. The higher the rating the less impact it has on the environment.

FULL SAP CALCULATION PRINTOUT

Calculation Type: New Build (As Designed)

Property Reference	019 - PRJ011495		Issued on Date	08/12/2021
Assessment Reference	019 S	Prop Type Ref	2B	
Property	Plot 19			

SAP Rating	83 B	DER	19.38	TER	20.01
Environmental	86 B	% DER<TER	3.13		
CO ₂ Emissions (t/year)	1.13	DFEE	48.62	TFEE	54.61
General Requirements Compliance	Pass	% DFEE<TFEE	10.97		

Assessor Details	Chris Nicholls, , Tel: ,	Assessor ID	T850-0001
Client			

SAP 2012 OVERHEATING ASSESSMENT FOR New Build (As Designed) 9.92

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Overheating Calculation Input Data

Dwelling type	EndTerrace House
Number of storeys	2
Cross ventilation possible	Yes
SAP Region	Thames Valley
Front of dwelling faces	North
Overshading	Average or unknown
Thermal mass parameter	137.8 (calculated from construction elements)
Night ventilation	Yes
Ventilation rate during hot weather (ach)	4.55 (Calculated rate)

Overheating Calculation

Summer ventilation heat loss coefficient	271.48 (P1)
Transmission heat loss coefficient	48.94 (37)
Summer heat loss coefficient	320.42 (P2)

Overhangs Orientation	Ratio	Z_overhangs	Overhang type
North	0.000	1.000	None
South	0.000	1.000	None

Solar shading Orientation	Z blinds	Solar access	Z overhangs	Z summer
North	0.850	0.90	1.000	0.765 (P8)
South	0.850	0.90	1.000	0.765 (P8)

[Jul]	Area m2	Solar flux Table 6a W/m2	g Specific data or Table 6b	FF Specific data or Table 6c	Shading	Gains W
North	2.8480	81.1852	0.7600	0.7200	0.7650	87.1097
South	3.2700	112.2060	0.7600	0.7200	0.7650	138.2337
total:						225.3434

	Jun	Jul	Aug	
Solar gains	238	225	207	(P3)
Internal gains	396	380	388	
Total summer gains	634	605	596	(P5)
Summer gain/loss ratio	1.98	1.89	1.86	(P6)
Summer external temperature	16.00	17.90	17.80	
Thermal mass temperature increment (TMP = 137.8)	1.04	1.04	1.04	
Threshold temperature	19.01	20.82	20.69	(P7)
Likelihood of high internal temperature	Not significant	Slight	Slight	

Assessment of likelihood of high internal temperature: Slight

BASIC COMPLIANCE REPORT

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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)	20.01	kgCO ₂ /m ²	
Dwelling Carbon Dioxide Emission Rate (DER)	19.38	kgCO ₂ /m ²	Pass
	-0.63 (-3.1%)	kgCO ₂ /m ²	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	54.61	kWh/m ² /yr	
Dwelling Fabric Energy Efficiency (DFEE)	48.62	kWh/m ² /yr	
	-6.0 (-11.0%)	kWh/m ² /yr	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.24 (max. 0.30)	0.24 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.16 (max. 0.25)	0.16 (max. 0.70)	Pass
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	Pass
Openings	1.23 (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)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system	Boiler system with radiators or underfloor - Mains gas Data from database Ideal LOGIC COMBI ESP1 30 Combi boiler Efficiency: 89.6% SEDBUK2009 Minimum: 88.0%	Pass
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BASIC COMPLIANCE REPORT

Calculation Type: New Build (As Designed)

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

2.85 m², No overhang

Windows facing South

3.27 m², No overhang

Air change rate

4.55 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)

Maximum

10.0

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