

PREDICTED ENERGY ASSESSMENT

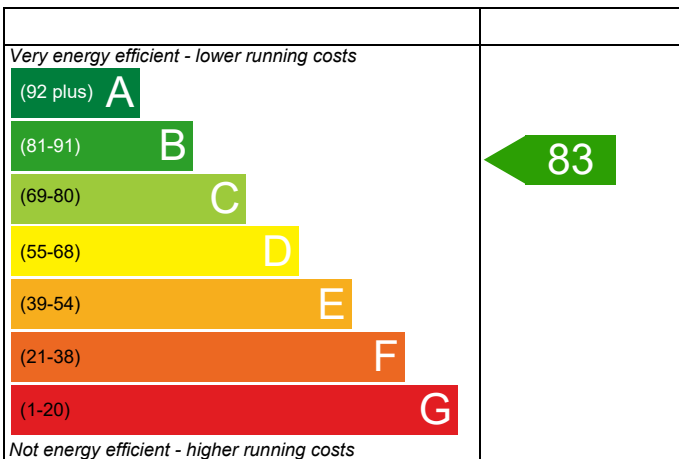
012 - PRJ011495

Dwelling type: House, Semi-Detached
 Date of assessment: 08/12/2021
 Produced by: Michael Juckes
 Total floor area: 85.3 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.

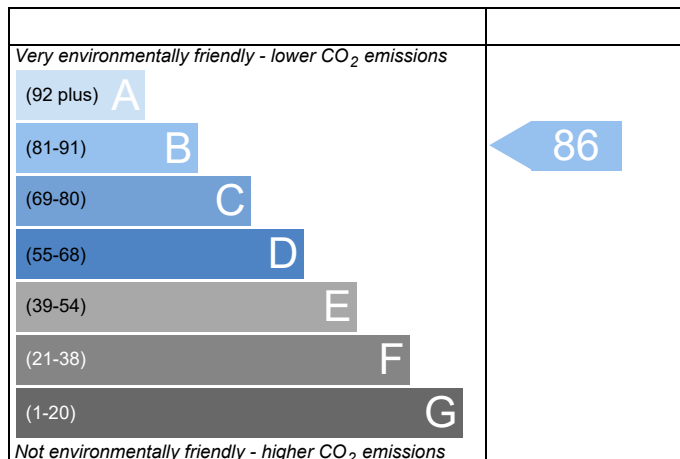
Energy Efficiency Rating



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	012 - PRJ011495		Issued on Date	08/12/2021
Assessment Reference	012 S	Prop Type Ref	3B	
Property	012 - PRJ011495			

SAP Rating	83 B	DER	18.25	TER	18.82
Environmental	86 B	% DER<TER	3.02		
CO ₂ Emissions (t/year)	1.28	DFEE	47.75	TFEE	53.78
General Requirements Compliance	Pass	% DFEE<TFEE	11.20		

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	SemiDetached House
Number of storeys	2
Cross ventilation possible	Yes
SAP Region	Thames Valley
Front of dwelling faces	South West
Overshading	Average or unknown
Thermal mass parameter	147.4 (calculated from construction elements)
Night ventilation	Yes
Ventilation rate during hot weather (ach)	4.55 (Calculated rate)

Overheating Calculation

Summer ventilation heat loss coefficient	327.93 (P1)
Transmission heat loss coefficient	56.95 (37)
Summer heat loss coefficient	384.88 (P2)

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

Solar shading Orientation	Z blinds	Solar access	Z overhangs	Z summer
North East	0.850	0.90	1.000	0.765 (P8)
South West	0.850	0.90	1.000	0.765 (P8)
North West	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 East	4.4940	98.8453	0.7600	0.7200	0.7650	167.3551
South West	3.5470	119.9223	0.7600	0.7200	0.7650	160.2549
North West	0.7390	98.8453	0.7600	0.7200	0.7650	27.5201

total: 355.1301

Solar gains	Jun 379	Jul 355	Aug 309	(P3)
Internal gains	448	429	439	
Total summer gains	826	785	748	(P5)

Summer gain/loss ratio	2.15	2.04	1.94	(P6)
Summer external temperature	16.00	17.90	17.80	
Thermal mass temperature increment (TMP = 147.4)	0.97	0.97	0.97	
Threshold temperature	19.12	20.91	20.71	(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)	18.82	kgCO ₂ /m ²		
Dwelling Carbon Dioxide Emission Rate (DER)	18.25	kgCO ₂ /m ²		Pass
	-0.57 (-3.0%)	kgCO ₂ /m ²		

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	53.78	kWh/m ² /yr		
Dwelling Fabric Energy Efficiency (DFEE)	47.75	kWh/m ² /yr		
	-6.0 (-11.2%)	kWh/m ² /yr		Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.24 (max. 0.30)	0.24 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.15 (max. 0.25)	0.15 (max. 0.70)	Pass
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	Pass
Openings	1.27 (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 East

4.49 m², No overhang

Windows facing South West

3.55 m², No overhang

Windows facing North West

0.74 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