

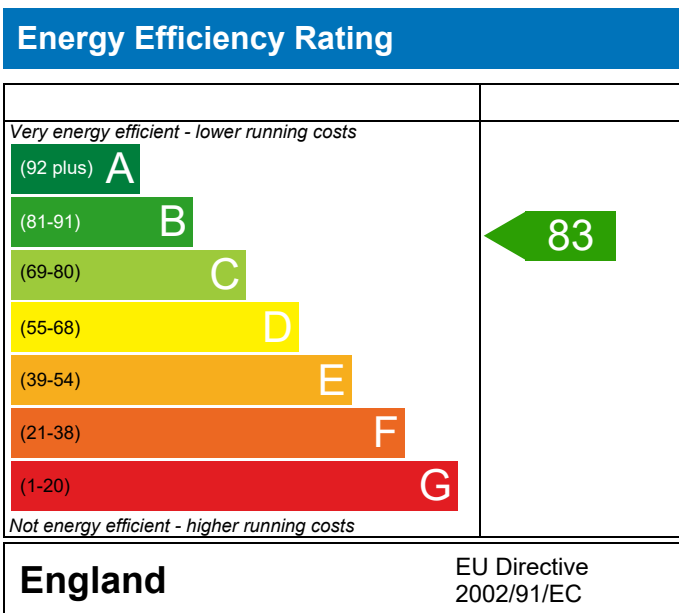
# PREDICTED ENERGY ASSESSMENT

Plot 13

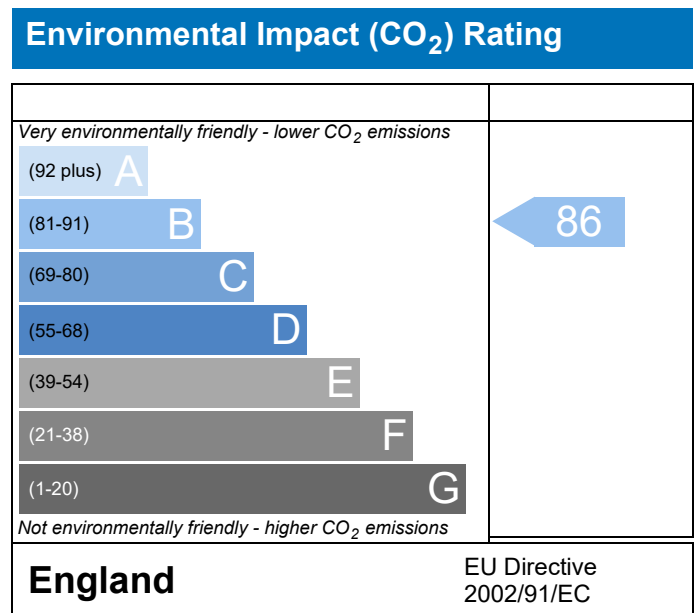
Dwelling type: House, Semi-Detached  
 Date of assessment: 08/12/2021  
 Produced by: Michael Juckes  
 Total floor area: 85.3 m<sup>2</sup>

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.



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.



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.

# FULL SAP CALCULATION PRINTOUT

## Calculation Type: New Build (As Designed)

Property Reference	013 - PRJ011495		Issued on Date	08/12/2021
Assessment Reference	013 S	Prop Type Ref	3B	
Property	Plot 13			

SAP Rating	83 B	DER	18.15	TER	18.73
Environmental	86 B	% DER<TER	3.07		
CO <sub>2</sub> Emissions (t/year)	1.27	DFEE	47.34	TFEE	53.31
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

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

#### 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 East	0.000	1.000	None
South 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 East	0.850	0.90	1.000	0.765 (P8)
South 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 East	0.7390	119.9223	0.7600	0.7200	0.7650	33.3883
South West	3.5470	119.9223	0.7600	0.7200	0.7650	160.2549
total:						360.9983

	Jun	Jul	Aug	
Solar gains	384	361	318	(P3)
Internal gains	448	429	439	
Total summer gains	832	790	756	(P5)
Summer gain/loss ratio	2.16	2.05	1.96	(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	19.13	20.92	20.73	(P7)
Likelihood of high internal temperature	Not significant	Slight	Slight	
Assessment of likelihood of high internal temperature:	Slight			

# BASIC COMPLIANCE REPORT

## Calculation Type: New Build (As Designed)

<b>Property Reference</b>	013 - PRJ011495		<b>Issued on Date</b>	08/12/2021	
<b>Assessment Reference</b>	013 S	<b>Prop Type Ref</b>	3B		
<b>Property</b>	Plot 13				
<b>SAP Rating</b>	83 B	<b>DER</b>	18.15	<b>TER</b>	18.73
<b>Environmental</b>	86 B	<b>% DER&lt;TER</b>	3.07		
<b>CO<sub>2</sub> Emissions (t/year)</b>	1.27	<b>DFEE</b>	47.34	<b>TFEE</b>	53.31
<b>General Requirements Compliance</b>	Pass	<b>% DFEE&lt;TFEE</b>	11.20		
<b>Assessor Details</b>	Chris Nicholls, , Tel: ,			<b>Assessor ID</b>	T850-0001
<b>Client</b>					

### 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)	18.15	kgCO <sub>2</sub> /m <sup>2</sup>	Pass
	-0.58 (-3.1%)	kgCO <sub>2</sub> /m <sup>2</sup>	

##### 1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	53.31	kWh/m <sup>2</sup> /yr	
Dwelling Fabric Energy Efficiency (DFEE)	47.34	kWh/m <sup>2</sup> /yr	
	-6.0 (-11.3%)	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	0.24 (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 m<sup>2</sup>, No overhang

Windows facing South East

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

Windows facing South West

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

Roof U-value

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

Door U-value

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