PREDICTED ENERGY ASSESSMENT

Design SAP
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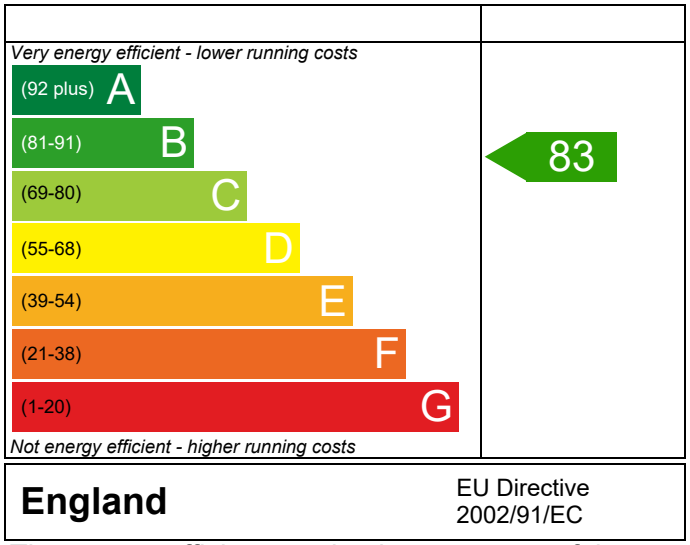
Plot 3, Threals Lane,
RH20

Dwelling type:	House, Detached
Date of assessment:	25/02/2022
Produced by:	Base Energy Services Ltd
Total floor area:	207.5 m²
DRRN:	4222-7520-5071

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.

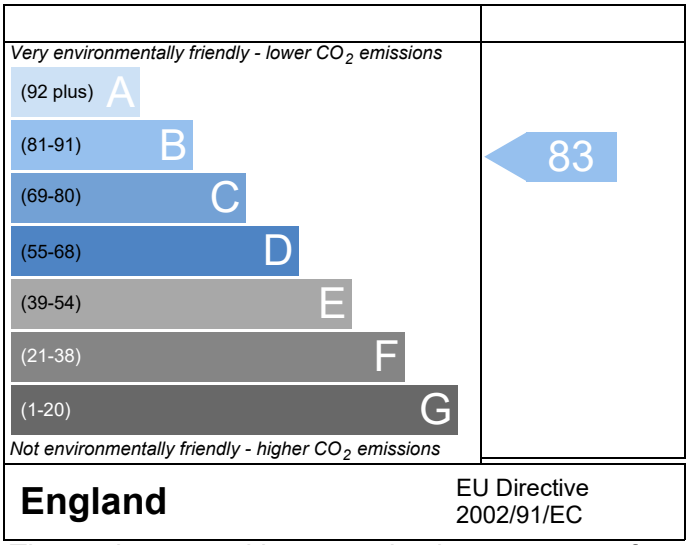
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO_2) emissions.

Energy Efficiency Rating



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_2) Rating



The environmental impact rating is a measure of a home's impact on the environment in terms of carbon dioxide (CO_2) emissions. The higher the rating the less impact it has on the environment.

This report has been produced by an accredited Elmhurst member whose work is subject to quality assurance audits. The data used to produce the report has been verified by the Elmhurst members' portal.

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ELMHURST ENERGY QUALITY PROMISE ACCREDITED MEMBER

Regs Region: England
Elmhurst Energy Systems SAP2012 Calculator (Design System) version 4.14r19

BUILDING REGULATION COMPLIANCE
Calculation Type: New Build (As Designed)

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Property Reference	S9151 03	**Issued on Date**	25/02/2022
Assessment Reference	PV	**Prop Type Ref**	
Property	Plot 3, Threals Lane, RH20		

SAP Rating	83 B	**DER**	16.41	**TER**	16.58
Environmental	83 B	**% DER<TER**	1.03		
CO_2 Emissions (t/year)	2.78	**DFEE**	47.98	**TFEE**	54.47
General Requirements Compliance	Pass	**% DFEE<TFEE**	11.91		

Assessor Details	Mr. Peter Kinsella, Base Energy Services Ltd, Tel: 0151 933 0328, peter@baseenergy.co.uk	**Assessor ID**	L770-0002
Client			

SUMARY FOR INPUT DATA FOR New Build (As Designed)

Criterion 1 – Achieving the TER and TFEE rate

1a TER and DER

Fuel for main heating	Heating oil		
Fuel factor	1.17 (oil)		
Target Carbon Dioxide Emission Rate (TER)	16.58	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	16.41	$kgCO_2/m^2$	Pass
	-0.17 (-1.0%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	54.47	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	47.98	$kWh/m^2/yr$	
	-6.5 (-11.9%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.16 (max. 0.30)	0.16 (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	0.15 (max. 0.20)	0.18 (max. 0.35)	Pass
Openings	1.62 (max. 2.00)	1.80 (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	5.00 (design value)	$m^3/(h.m^2)$ @ 50 Pa	
Maximum	10.0	$m^3/(h.m^2)$ @ 50 Pa	Pass

Limiting System Efficiencies

4 Heating efficiency

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Main heating system	Boiler system with radiators or underfloor - Oil Data from database Worcester GREENSTAR DANESMOOR 18/25 ErP+ Efficiency: 90.6% SEDBUK2009 Minimum: 88.0%		Pass
Secondary heating system	Room heaters - Wood Logs Closed room heater Efficiency: 65% Minimum: 65%		Pass
5 Cylinder insulation			
Hot water storage	Nominal cylinder loss: 1.74 kWh/day Permitted by DBSCG 2.24		Pass
Primary pipework insulated	Yes		Pass
6 Controls			
Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
Boiler interlock	Yes		Pass
7 Low energy lights			
Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass
8 Mechanical ventilation			
Continuous extract system			
Specific fan power	0.26		
Maximum	0.7		Pass

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (South East England)	Medium	Pass
Based on:		
Overshading	Average	
Windows facing North	0.27 m², No overhang	
Windows facing East	13.95 m², No overhang	
Windows facing South	5.71 m², No overhang	
Windows facing West	7.75 m², No overhang	
Air change rate	2.50 ach	
Blinds/curtains	None	

Criterion 4 – Building performance consistent with DER and DFEE rate

Party Walls

Type	U-value		
		W/m²K	Pass

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	5.00 (design value)	$m^3/(h.m^2)$ @ 50 Pa	
Maximum	10.0	$m^3/(h.m^2)$ @ 50 Pa	Pass

10 Key features

Party wall U-value	0.00	W/m^2K
Secondary heating (wood logs)	N/A	
Secondary heating fuel:	wood logs	
Photovoltaic array	1.10	kW

RECOMMENDATIONS

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	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	£46	B 85	B 85	Recommended
Photovoltaic			0	0	Already installed
Wind turbine			0	0	Not applicable
Totals	**£4,000 - £6,000**	**£46**	**B 85**	**B 85**	

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