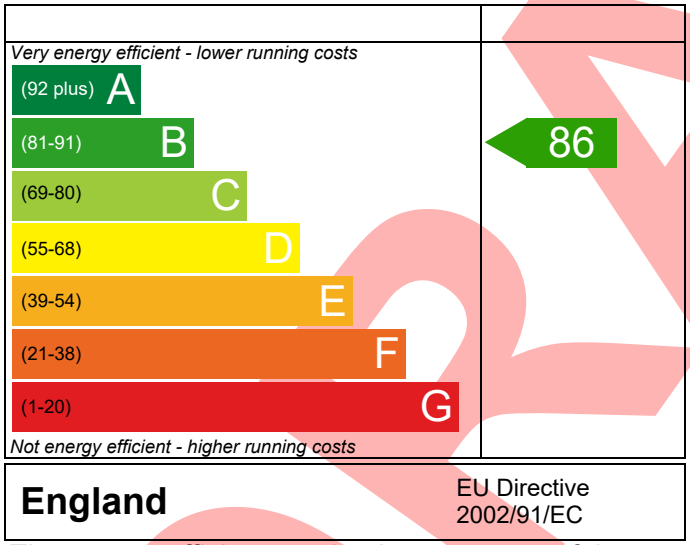
PREDICTED ENERGY ASSESSMENT

Dwelling type:	House, Detached
Date of assessment:	04/03/2024
Produced by:	Lorraine Clark
Total floor area:	553.14 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 (CO_2) emissions.

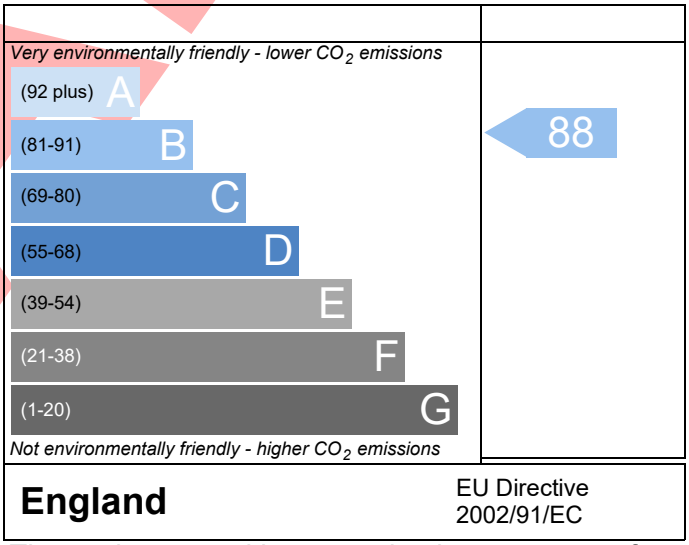
Energy Efficiency Rating



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_2) 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_2) emissions. The higher the rating the less impact it has on the environment.

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THERMAL BRIDGING
Calculation Type: New Build (As Designed)

Property Reference	8 Williams Way	**Issued on Date**	04/03/2024
Assessment Reference	As Designed	**Prop Type Ref**	Baseline
Property			

SAP Rating	86 B	**DER**	10.48	**TER**	19.54
Environmental	88 B	**% DER<TER**	46.37		
CO_2 Emissions (t/year)	5.00	**DFEE**	45.95	**TFEE**	57.42
General Requirements Compliance	Pass	**% DFEE<TFEE**	19.98		

Assessor Details	Ms. Lorraine Clark, Lorraine Clark, Tel: 01564795566, lorraine@hibec.co.uk	**Assessor ID**	CH40-0001
Client			

	Junction detail	Source Type	Psi (W/mK)	Length (m)	Result	Reference
External wall	E2 Other lintels (including other steel lintels)	Table K1 - Approved	0.300	46.39	13.92	
External wall	E3 Sill	Table K1 - Approved	0.040	30.16	1.21	
External wall	E4 Jamb	Table K1 - Approved	0.050	80.40	4.02	
External wall	E5 Ground floor (normal)	Table K1 - Approved	0.160	63.72	10.20	
External wall	E20 Exposed floor (normal)	Table K1 - Default	0.320	10.32	3.30	
External wall	E6 Intermediate floor within a dwelling	Table K1 - Approved	0.070	120.61	8.44	
External wall	E11 Eaves (insulation at rafter level)	Table K1 - Approved	0.040	62.70	2.51	
External wall	E14 Flat roof	Table K1 - Default	0.080	22.86	1.83	
External wall	E16 Corner (normal)	Table K1 - Approved	0.090	47.20	4.25	
External wall	E17 Corner (inverted – internal area greater than external area)	Table K1 - Approved	-0.090	5.50	-0.50	
External roof	R1 Head of roof window	Table K1 - Default	0.080	1.20	0.10	
External roof	R2 Sill of roof window	Table K1 - Default	0.060	1.20	0.07	
External roof	R3 Jamb of roof window	Table K1 - Default	0.080	4.44	0.36	
External roof	R4 Ridge (vaulted ceiling)	Table K1 - Default	0.080	20.78	1.66	
External roof	R5 Ridge (inverted)	Table K1 - Default	0.040	4.16	0.17	
External roof	R6 Flat ceiling	Table K1 - Default	0.060	43.50	2.61	
External roof	R7 Flat ceiling (inverted)	Table K1 - Default	0.040	20.67	0.83	
External roof	R9 Roof to wall (flat ceiling)	Table K1 - Default	0.040	11.40	0.46	

Total: **55.42** **W/mK:**

Y-Value: **0.052** **W/m²K:**

BASIC COMPLIANCE REPORT
Calculation Type: New Build (As Designed)

Property Reference	8 Williams Way	**Issued on Date**	04/03/2024
Assessment Reference	As Designed	**Prop Type Ref**	Baseline
Property			

SAP Rating	86 B	**DER**	10.48	**TER**	19.54
Environmental	88 B	**% DER<TER**	46.37		
CO_2 Emissions (t/year)	5.00	**DFEE**	45.95	**TFEE**	57.42
General Requirements Compliance	Pass	**% DFEE<TFEE**	19.98		

Assessor Details	Ms. Lorraine Clark, Lorraine Clark, Tel: 01564795566, lorraine@hibec.co.uk	**Assessor ID**	CH40-0001
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	Electricity		
Fuel factor	1.55 (electricity)		
Target Carbon Dioxide Emission Rate (TER)	19.54	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	10.48	$kgCO_2/m^2$	Pass
	-9.06 (-46.4%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	57.42	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	45.95	$kWh/m^2/yr$	
	-11.5 (-20.0%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.17 (max. 0.30)	0.18 (max. 0.70)	Pass
Floor	0.12 (max. 0.25)	0.18 (max. 0.70)	Pass
Roof	0.15 (max. 0.20)	0.16 (max. 0.35)	Pass
Openings	1.18 (max. 2.00)	1.20 (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	4.00 (design value)	
Maximum	10.0	Pass

Limiting System Efficiencies

4 Heating efficiency

Main heating system 1	Heat pump with radiators or underfloor - Electric Vaillant aroTHERM plus 12kW + AI VWL125/6A230VS2+VWZAIMB2	

Main heating system 2	Heat pump with radiators or underfloor - Electric Vaillant aroTHERM plus 12kW + AI VWL125/6A230VS2+VWZAIMB2		
Secondary heating system	None		
5 Cylinder insulation			
Hot water storage	Measured cylinder loss: 2.32 kWh/day Permitted by DBSCG 2.86		Pass
Primary pipework insulated	Yes		Pass
6 Controls			
Space heating controls 1	Time and temperature zone control		Pass
Space heating controls 2	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
	Independent timer for DHW		Pass
7 Low energy lights			
Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass
8 Mechanical ventilation			
Continuous extract system (decentralised)			
Specific fan power	0.1800 0.1600 0.1600		
Maximum	0.7		Pass

Criterion 3 – Limiting the effects of heat gains in summer

9 Summertime temperature

Overheating risk (Thames Valley)	Not significant	Pass

Based on:

Overshading	Average
Windows facing North East	51.28 m², No overhang
Windows facing South East	4.46 m², No overhang
Windows facing South West	26.00 m², No overhang
Windows facing North West	0.91 m², No overhang
Air change rate	8.00 ach
Blinds/curtains	None

Criterion 4 – Building performance consistent with DER and DFEE rate

Air permeability and pressure testing

3 Air permeability

Air permeability at 50 pascals	4.00 (design value)		
Maximum	10.0		Pass

10 Key features

External wall U-value	0.12	W/m²K
Roof U-value	0.12	W/m²K
Floor U-value	0.11	W/m²K
Door U-value	1.00	W/m²K

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