PREDICTED ENERGY ASSESSMENT

AES Sustainability Consultants

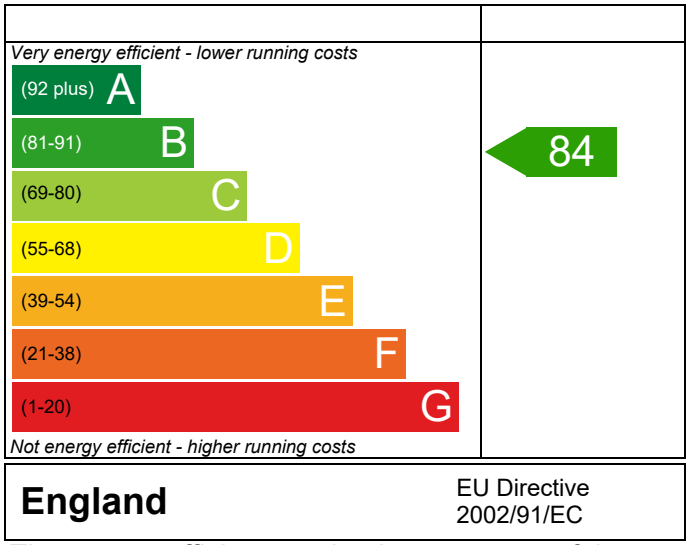
176, 3 Bed,
K, WC, U, B, ES

Dwelling type:	House, Detached
Date of assessment:	19/07/2023
Produced by:	Paul Frearson
Total floor area:	102.82 m²
DRRN:	4297-5937-1031

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.

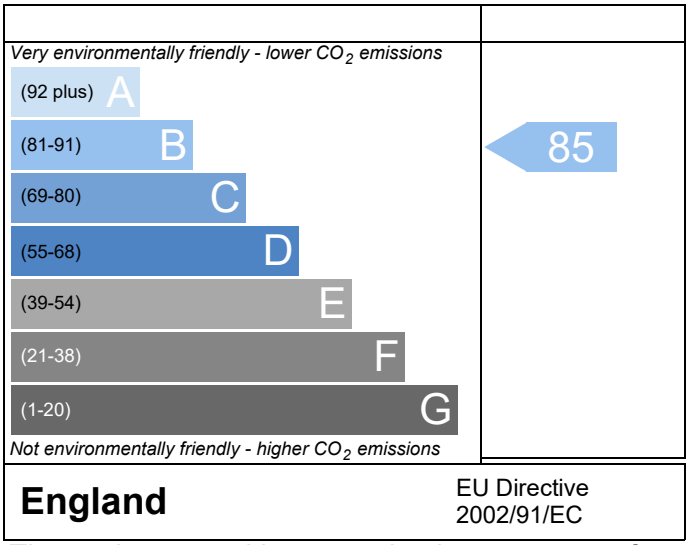
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO_2) emissions.

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.

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elmhurst energy APPROVED ENERGY ASSESSOR

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	4907-AA61-6734-176	**Issued on Date**	19/07/2023
Assessment Reference	176	**Prop Type Ref**	X308-Cypress-Formal-Det (As)
Property	176, 3 Bed, K, WC, U, B, ES		

SAP Rating	84 B	**DER**	17.74	**TER**	18.17
Environmental	85 B	**% DER<TER**	2.35		
CO_2 Emissions (t/year)	1.49	**DFEE**	49.96	**TFEE**	58.09
General Requirements Compliance	Pass	**% DFEE<TFEE**	13.99		

Assessor Details	Mr. Paul Frearson, Paul Frearson, Tel: 07376033865, paul.frearson@aessc.co.uk	**Assessor ID**	AA61-0001
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	Mains gas		
Fuel factor	1.00 (mains gas)		
Target Carbon Dioxide Emission Rate (TER)	18.17	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	17.74	$kgCO_2/m^2$	Pass
	-0.43 (-2.4%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	58.09	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	49.96	$kWh/m^2/yr$	
	-8.1 (-13.9%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.21 (max. 0.30)	0.21 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.18 (max. 0.25)	0.18 (max. 0.70)	Pass
Roof	0.11 (max. 0.20)	0.11 (max. 0.35)	Pass
Openings	1.38 (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)	$m^3/(h.m^2)$ @ 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 - Mains gas Data from database Ideal LOGIC COMBI ESP1 35 Combi boiler Efficiency: 89.6% SEDBUK2009 Minimum: 88.0%		Pass
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 Windows facing South Windows facing West	10.07 m², No overhang 6.67 m², No overhang 4.03 m², No overhang		
Air change rate	4.00 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	5.01 (design value)	m³/(h.m²) @ 50 Pa	
Maximum	10.0	m³/(h.m²) @ 50 Pa	Pass

10 Key features

Party wall U-value	0.00	W/m²K
Roof U-value	0.11	W/m²K
Thermal bridging y-value	0.035	W/m²K

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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	£84	B 85	B 87	Recommended
Photovoltaic	£3,500 - £5,500	£670	A 94	A 95	Recommended
Wind turbine			0	0	Not applicable
Totals	**£7,500 - £11,500**	**£754**	**A 94**	**A 95**	

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