PREDICTED ENERGY ASSESSMENT

ATSPACE
DELIVERING BEYOND COMPLIANCE

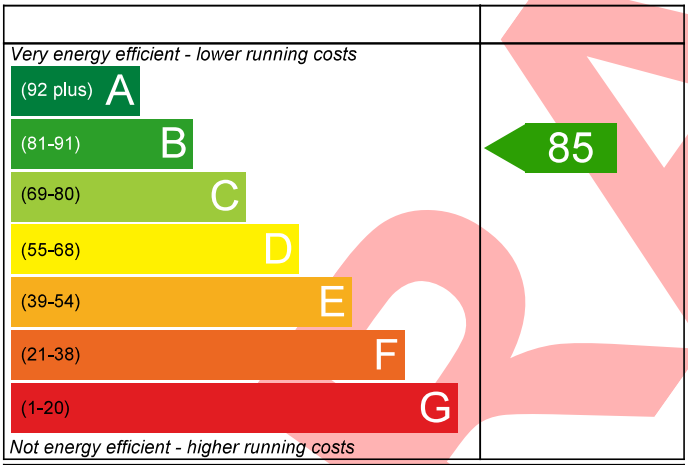
The Star, Uxbridge Road,
Uxbridge,
UB10 0LY

Dwelling type:	House, Semi-Detached
Date of assessment:	05/05/2023
Produced by:	Paul Whiffin
Total floor area:	128.11 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.

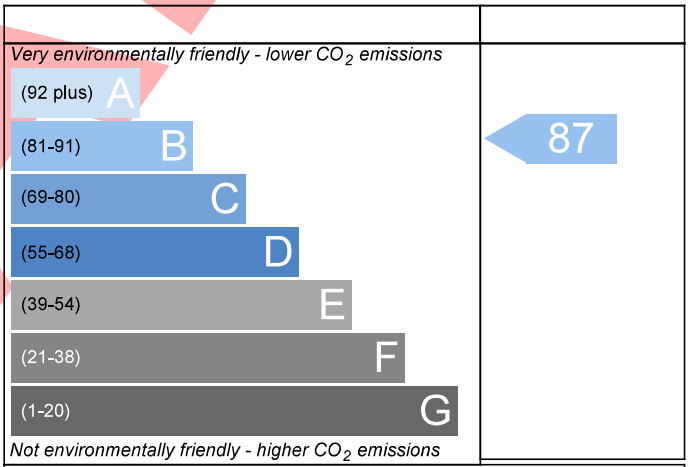
The energy performance has been assessed using the Government approved SAP2012 methodology and is rated in terms of the energy use per square meter of floor area; the energy efficiency is based on fuel costs and the environmental impact is based on carbon dioxide (CO_2) emissions.

Energy Efficiency Rating



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

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Property Reference	Q-03466 H.02	**Issued on Date**	05/05/2023
Assessment Reference	Design V3	**Prop Type Ref**	New Build
Property	The Star, Uxbridge Road, Uxbridge, UB10 0LY		

SAP Rating	85 B	**DER**	16.17	**TER**	23.65
Environmental	87 B	**% DER<TER**	31.61		
CO_2 Emissions (t/year)	1.49	**DFEE**	37.64	**TFEE**	54.81
General Requirements Compliance	Pass	**% DFEE<TFEE**	31.34		

Assessor Details	Mr. Paul Whiffin, Paul Whiffin, Tel: 01763 268685, energy@atspaceltd.com	**Assessor ID**	y314-0001
Client	Harjeet Suri, 33244		

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)	23.65	$kgCO_2/m^2$	
Dwelling Carbon Dioxide Emission Rate (DER)	16.17	$kgCO_2/m^2$	Pass
	-7.48 (-31.6%)	$kgCO_2/m^2$	

1b TFEE and DFEE

Target Fabric Energy Efficiency (TFEE)	54.81	$kWh/m^2/yr$	
Dwelling Fabric Energy Efficiency (DFEE)	37.64	$kWh/m^2/yr$	
	-17.2 (-31.4%)	$kWh/m^2/yr$	Pass

Criterion 2 – Limits on design flexibility

Limiting Fabric Standards

2 Fabric U-values

Element	Average	Highest	
External wall	0.13 (max. 0.30)	0.14 (max. 0.70)	Pass
Party wall	0.00 (max. 0.20)	-	Pass
Floor	0.12 (max. 0.25)	0.12 (max. 0.70)	Pass
Roof	0.14 (max. 0.20)	0.15 (max. 0.35)	Pass
Openings	1.20 (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	3.00 (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

Main heating system	Boiler system with radiators or underfloor - Electric Direct-acting boiler	

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Secondary heating system	None		
5 Cylinder insulation			
Hot water storage	Measured cylinder loss: 1.90 kWh/day Permitted by DBSCG 2.24		Pass
Primary pipework insulated	No primary pipework		
6 Controls			
Space heating controls	Time and temperature zone control		Pass
Hot water controls	Cylinderstat		Pass
7 Low energy lights			
Percentage of fixed lights with low-energy fittings	100	%	
Minimum	75	%	Pass
8 Mechanical ventilation			
Continuous supply and extract system			
Specific fan power	0.62		
Maximum	1.5		Pass
MVHR efficiency	94	%	
Minimum	70	%	Pass

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 South East Windows facing North West	16.82 m², No overhang 19.32 m², No overhang		
Air change rate	6.00 ach		
Blinds/curtains	None		

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	3.00 (design value)	m³/(h.m²) @ 50 Pa	
Maximum	10.0	m³/(h.m²) @ 50 Pa	Pass

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10 Key features

External wall U-value	0.13	W/m²K
External wall U-value	0.11	W/m²K
External wall U-value	0.14	W/m²K
Party wall U-value	0.00	W/m²K
Roof U-value	0.12	W/m²K
Roof U-value	0.11	W/m²K
Floor U-value	0.12	W/m²K
Thermal bridging y-value	0.037	W/m²K
Air permeability	3.0	m³/m²h
Photovoltaic array	1.81	kW

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SUMMARY FOR INPUT DATA FOR: New Build (As Designed)

Orientation	South East
Property Tenure	Unknown
Transaction Type	New dwelling
Terrain Type	Suburban
1.0 Property Type	House, Semi-Detached
2.0 Number of Storeys	3
3.0 Date Built	2022
4.0 Sheltered Sides	1
5.0 Sunlight/Shade	Average or unknown

6.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground Floor:	21.84 m	49.86 m²	2.52 m
1st Storey:	21.84 m	49.86 m²	2.90 m
2nd Storey:	21.93 m	28.39 m²	2.01 m

7.0 Living Area	24.44	m²
8.0 Thermal Mass Parameter	Simple calculation - Medium	
Thermal Mass	250.00	kJ/m²K

9.0 External Walls

Description	Type	U-Value (W/m²K)	Gross Area (m²)	Nett Area (m²)
External Wall	Cavity Wall	0.13	124.75	88.61
Ashlar Wall	Timber Frame	0.11	20.97	20.97
Dormer Cheeks	Timber Frame	0.14	8.11	8.11

9.1 Party Walls

Description	Type	Construction	U-Value (W/m²K)	Area (m²)
Party Wall 1	Filled Cavity with Edge Sealing		0.00	34.41

10.0 External Roofs

Description	Type	U-Value (W/m²K)	Gross Area (m²)	Nett Area (m²)
Slope Roof	External Slope Roof	0.15	40.18	40.18
Flat Roof	External Flat Roof	0.12	4.01	4.01
Ashlar Ceiling	External Plane Roof	0.11	15.30	15.30

11.0 Heat Loss Floors

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Description	Type	Construction	U-Value (W/m²K)	Area (m²)
Heat Loss Floor 1	Ground Floor - Solid		0.12	49.86

12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Argon Filled	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Glazing	BFRC data	Window	Double Low-E Soft 0.1			0.50			1.20

13.0 Openings

Name	Opening Type	Location	Orientation	Curtain Type	Overhang Ratio	Wide Overhang	Width (m)	Height (m)	Count	Area (m²)	Curtain Closed
FW	Window	[1] External Wall	South East	None	0.00					14.32	
RW	Window	[1] External Wall	North West	None	0.00					7.88	
RDW	Window	[1] External Wall	North West	None	0.00					3.07	
FGD	Window	[1] External Wall	South East	None	0.00					2.50	
RGD	Window	[1] External Wall	North West	None	0.00					8.37	

14.0 Conservatory	None	
15.0 Draught Proofing	100	%
16.0 Draught Lobby	No	

17.0 Thermal Bridging	Calculate Bridges	

17.1 List of Bridges

Source Type	Bridge Type	Length	Psi	Imported	Reference:
Independently assessed	E2 Other lintels (including other steel lintels)	18.98	0.040	No	LABC
Independently assessed	E3 Sill	15.00	0.027	No	LABC
Independently assessed	E4 Jamb	43.48	0.029	No	LABC
Independently assessed	E5 Ground floor (normal)	22.21	0.084	No	
Independently assessed	E6 Intermediate floor within a dwelling	44.14	0.003	No	LABC
Table K1 - Default	E11 Eaves (insulation at rafter level)	2.81	0.080	No	
Table K1 - Default	E13 Gable (insulation at rafter level)	4.01	0.080	No	
Independently assessed	E16 Corner (normal)	16.63	0.050	No	LABC
Independently assessed	E17 Corner (inverted – internal area greater than external area)	2.82	-0.091	No	
Table K1 - Approved	E18 Party wall between dwellings	14.06	0.060	No	
Table K1 - Default	P1 Party wall - Ground floor	5.11	0.160	No	
Table K1 - Default	P2 Party wall - Intermediate floor within a dwelling	7.94	0.000	No	
Table K1 - Default	R4 Ridge (vaulted ceiling)	10.87	0.080	No	
Table K1 - Default	R7 Flat ceiling (inverted)	7.71	0.040	No	
Table K1 - Default	R8 Roof to wall (rafter)	16.69	0.060	No	
Table K1 - Default	R9 Roof to wall (flat ceiling)	6.03	0.040	No	

Y-value	0.037	W/m²K

18.0 Pressure Testing	Yes	
Designed AP_{50}	3.00	m³/(h.m²) @ 50 Pa
Property Tested ?		
As Built AP_{50}		m³/(h.m²) @ 50 Pa

19.0 Mechanical Ventilation

Summer Overheating

Windows open in hot weather	Windows fully open
Cross ventilation possible	Yes
Night Ventilation	No
Air change rate	6.00

Mechanical Ventilation

Mechanical Ventilation System Present	Yes

Approved Installation	Yes
Mechanical Ventilation data Type	Database
Type	Balanced mechanical ventilation with heat recovery
MV Reference Number	500502
Configuration	1
MVHR Duct Insulated	Yes
Manufacturer SFP	0.62
Duct Type	Rigid
MVHR Efficiency	94.00
Wet Rooms	1

20.0 Fans, Open Fireplaces, Flues

	MHS	SHS	Other	Total
Number of Chimneys	0		0	0
Number of open flues	0		0	0
Number of intermittent fans				0
Number of passive vents				0
Number of flueless gas fires				0

21.0 Fixed Cooling System	No	
22.0 Lighting		
Internal		
Total number of light fittings	20	
Total number of L.E.L. fittings	20	
Percentage of L.E.L. fittings	100.00	%
External		
External lights fitted	Yes	
Light and motion sensor	Yes	
23.0 Electricity Tariff	Standard	
24.0 Main Heating 1	SAP table	
Percentage of Heat	100	%
Main Heating	BEE	
SAP Code	191	
Efficiency (SAP Table)	100.0	%
Controls	CBI Time and temperature zone control	
PCDF Controls	0	
Delayed Start Stat	Yes	
Sap Code	2110	
Is MHS Pumped	Pump in heated space	
Heat Emitter	Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
25.0 Main Heating 2	None	
Community Heating	None	
28.0 Water Heating	HWP From main heating 1	
Water Heating	Main Heating 1	

Flue Gas Heat Recovery System	No	
Waste Water Heat Recovery Instantaneous System 1	No	
Waste Water Heat Recovery Instantaneous System 2	No	
Waste Water Heat Recovery Storage System	No	
Solar Panel	No	
Water use <= 125 litres/person/day	Yes	
SAP Code	901	
Immersion Heater	Dual	
29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder In Heated Space	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	200.00	L
Loss	1.90	kWh/day
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	

PV Cells kWp	Orientation	Elevation	Overshading	Connected to Dwelling
1.81	South East	30°	Modest	Yes

Recommendations

Lower cost measures

None

Further measures to achieve even higher standards

	Typical Cost	Typical savings per year	Ratings after improvement	
			SAP rating	Environmental Impact
Solar water heating	£4,000 - £6,000	£380	B 90	