Summary for Input Data

elmhurst energy

Property Reference	P241093 Hardy Lodge	**Issued on Date**	07/02/2024
Assessment Reference	P241093	**Prop Type Ref**	
Property	Hardy Lodge, Ivinghoe Aston, Leigthon Buzzard, LU7 9DF		

SAP Rating	97 A	**DER**	0.83	**TER**	9.71
Environmental	99 A	**% DER < TER**			91.45
CO_2 Emissions (t/year)	0.08	**DFEE**	47.92	**TFEE**	47.96
Compliance Check	See BREL	**% DFEE < TFEE**			0.09
% DPER < TPER	86.09	**DPER**	7.16	**TPER**	51.50

Assessor Details	Mr. Malcolm Lisle	**Assessor ID**	P736-0001
Client	JM, Jo Mitchell		

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

Orientation	Southeast
Property Tenture	ND
Transaction Type	6
Terrain Type	Rural
1.0 Property Type	House, Detached
2.0 Number of Storeys	2
3.0 Date Built	2024
4.0 Sheltered Sides	0
5.0 Sunlight/Shade	Average or unknown
6.0 Thermal Mass Parameter	Precise calculation
7.0 Electricity Tariff	Standard
Smart electricity meter fitted	No
Smart gas meter fitted	No

7.0 Measurements

	Heat Loss Perimeter	Internal Floor Area	Average Storey Height
Ground floor:	48.25 m	102.61 m²	2.96 m
1st Storey:	32.06 m	54.65 m²	2.34 m

8.0 Living Area 59.41 m²

9.0 External Walls

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Res	Shelter	Openings	Area Calculation Type
Cavity Wall	Cavity Wall	Cavity wall : plasterboard on dabs, AAC block, filled cavity, any outside structure	0.16	60.00	147.11	107.33	0.00	None	39.78	Enter Gross Area
Wall to Roof Void	Timber Frame	Timber framed wall (one layer of plasterboard)	0.18	9.00	34.59	34.59	0.00	None	0.00	Enter Gross Area

9.2 Internal Walls

Description	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Walls - Timber Frame	Plasterboard on timber frame	9.00	226.32

10.0 External Roofs

Description	Type	Construction	U-Value (W/m²K)	Kappa (kJ/m²K)	Gross Area(m²)	Nett Area (m²)	Shelter Code	Shelter Factor	Calculation Type	Openings
Sloping Roof	External Slope Roof	Plasterboard, insulated slope	0.18	9.00	145.11	138.39	None	0.00	Enter Gross Area	6.72

10.2 Internal Ceilings

Description	Storey	Construction	Area (m²)
Internal Ceiling - G Floor	Lowest occupied	Plasterboard ceiling, carpeted chipboard floor	54.65

11.0 Heat Loss Floors

Description	Type	Storey Index	Construction	U-Value (W/m²K)	Shelter Code	Shelter Factor	Kappa (kJ/m²K)	Area (m²)
Ground Floor	Ground Floor - Solid	Lowest occupied	Suspended concrete floor, carpeted	0.12	None	0.00	75.00	102.61

11.2 Internal Floors

Description	Storey Index	Construction	Kappa (kJ/m²K)	Area (m²)
Internal Floor - 1st F1oor		Plasterboard ceiling, carpeted chipboard floor	9.00	54.65

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12.0 Opening Types

Description	Data Source	Type	Glazing	Glazing Gap	Filling Type	G-value	Frame Type	Frame Factor	U Value (W/m²K)
Windows/Doors	Manufacturer	Window	Triple Low-E Soft 0.05			0.57		0.70	1.00
Solid Doors	Manufacturer	Half Glazed Door	Triple Low-E Soft 0.05			0.57		0.70	1.00
Rooflights	Manufacturer	Roof Light	Triple Low-E Soft 0.05			0.57		0.70	1.10

13.0 Openings

Name	Opening Type	Location	Orientation	Area (m²)	Pitch
Windows	Windows/Doors	Cavity Wall	North West	2.50	
Windows	Windows/Doors	Cavity Wall	North East	8.08	
Windows	Windows/Doors	Cavity Wall	South East	16.43	
Windows	Windows/Doors	Cavity Wall	South West	5.21	
Utility Door	Solid Doors	Cavity Wall	North West	1.89	
Front Door	Solid Doors	Cavity Wall	South East	1.89	
Dining Doors	Windows/Doors	Cavity Wall	South West	3.78	
Rooflights	Rooflights	Sloping Roof	North West	1.68	45
Rooflights	Rooflights	Sloping Roof	South East	5.04	45

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

Bridge Type	Source Type	Length	Psi	Adjusted Reference:	Imported
E2 Other lintels (including other steel lintels)	Independently assessed	27.36	0.06	0.06	No
E3 Sill	Independently assessed	23.76	0.04	0.04	No
E4 Jamb	Independently assessed	52.60	0.05	0.05	No
E5 Ground floor (normal)	Independently assessed	48.25	0.06	0.06	No
E6 Intermediate floor within a dwelling	Independently assessed	32.06	0.00	0.00	No
E11 Eaves (insulation at rafter level)	Independently assessed	34.90	0.04	0.04	No
E13 Gable (insulation at rafter level)	Independently assessed	16.40	0.07	0.07	No
E16 Corner (normal)	Independently assessed	14.30	0.04	0.04	No
E17 Corner (inverted – internal area greater than external area)	Independently assessed	2.70	-0.05	-0.05	No
R1 Head of roof window	Table K1 - Default	5.60	0.24	0.24	No
R2 Sill of roof window	Table K1 - Default	5.60	0.24	0.24	No
R3 Jamb of roof window	Table K1 - Default	16.80	0.24	0.24	No
R6 Flat ceiling	Table K1 - Default	47.70	0.12	0.12	No

Y-value	0.05	W/m²K
18.0 Pressure Testing	Yes	
Designed AP_{50}	4.50	m³/(h.m²) @ 50 Pa
Test Method	Blower Door	
19.0 Mechanical Ventilation		
Mechanical Ventilation		
Mechanical Ventilation System Present	Yes	
Approved Installation	No	
Mechanical Ventilation data Type	Database	
Type	Balanced mechanical ventilation with heat recovery	
MV Reference Number	500289	
Manufacturer SFP	0.63	
Duct Type	Rigid	
MVHR Efficiency	90.00	
Wet Rooms	4	
SFP from Installer Commissioning Certificate	No	
MVHR System Location	Inside heated envelope (installed exclusively)	
Duct Installation Specification	Level 1	
20.0 Fans, Open Fireplaces, Flues		
21.0 Fixed Cooling System	No	
22.0 Lighting		
No Fixed Lighting	No	

Name	Efficacy	Power	Capacity	Count
Lighting	91.67	12	1100	16

Summary for Input Data

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24.0 Main Heating 1	Database	
Percentage of Heat	100.00	%
Database Ref. No.	104642	
Fuel Type	Electricity	
In Winter	398.62	
In Summer	177.98	
Model Name	Ecodan 8.5 kW	
Manufacturer	Mitsubishi Electric Europe B.V.	
System Type	Heat Pump	
Controls SAP Code	2207	
Is MHS Pumped	Pump in heated space	
Heating Pump Age	2013 or later	
Heat Emitter	Underfloor	
Underfloor Heating	Yes - Pipes in thin screed	
Flow Temperature	Enter value	
Flow Temperature Value	35.00	
25.0 Main Heating 2	None	
26.0 Heat Networks	None	
28.0 Water Heating		
Water Heating	Main Heating 1	
SAP Code	901	
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	No	
Cold Water Source	From mains	
Bath Count	1	
Immersion Only Heating Hot Water	No	

28.1 Showers

Description	Shower Type	Flow Rate [l/min]	Rated Power [kW]	Connected	Connected To

28.3 Waste Water Heat Recovery System

29.0 Hot Water Cylinder	Hot Water Cylinder	
Cylinder Stat	Yes	
Cylinder In Heated Space	Yes	
Independent Time Control	Yes	
Insulation Type	Measured Loss	
Cylinder Volume	189.00	L
Loss	2.09	kWh/day
Pipes insulation	Fully insulated primary pipework	
In Airing Cupboard	No	
31.0 Thermal Store	None	
32.0 Photovoltaic Unit	One Dwelling	
Export Capable Meter?	Yes	
Connected To Dwelling	Yes	

Summary for Input Data

Diverter	No
Battery Capacity [kWh]	13.05

PV Cells kWp	Orientation	Elevation	Overshading	FGHRS	MCS Certificate	Overshading Factor	MCS Certificate Reference	Panel Manufacturer
2.60	South East	45°	Modest		No	0.80		
2.60	South West	45°	Modest		No	0.80		

34.0 Small-scale Hydro None

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

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
	£4,000 - £6,000	£63	A 99	A 99
			0	0
	£15,000 - £25,000	£692	A 112	A 103